Colby Community College Student Success at the Baccalaureate Level

Seth Macon Carter
A.A., Allen Community College, 2007
B.A., Emporia State University, 2009
M.S., Pittsburg State University, 2013

Submitted to the Graduate Department and Faculty of the School of Education of
Baker University in partial fulfillment of the requirements for the degree of
Doctor of Education in Educational Leadership

_____
Marie Miller, Ph.D.
Major Advisor

_____
Tes Mehring, Ph.D.

_____
Dean Hollenbeck, Ph.D.

Date Defended: December 4, 2017

Abstract

There is limited research that focuses on differentiating student success rates at the baccalaureate level (persistence and graduation status) among community college transfer students, and associate degree completing students. Data on student success provided to community colleges for students who transfer to a university do not designate or classify students by associate degree completers and individuals who transferred prior to obtaining an associate degree. The purpose of this study was to investigate whether differences existed in student success (persistence and graduation status) between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree. For this study, student success was measured in two ways, persistence (persisted, did not persist) and graduation status (graduated, currently enrolled, did not graduate), among the cohort of Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree.

The effect of student sex, race, and state of origin of Colby Community College transfer and associate degree completing students was also explored. Sex was defined as the classification of a student as male or female. Race was defined as minority (any race other than Caucasian) and non-minority (Caucasian) status. The state of origin was identified as Kansas or other state. Findings from the current study appeared to illustrate the correlation among the selected sub-groups of students earning an associate degree and experiencing student success at the baccalaureate level, even if only marginally significant.

Dedication

I would like to dedicate the completion of my doctorate to my family and my loved ones. Specifically, I would like to dedicate the completion of my doctorate to my wife and kids. Daddy is sorry for the things he had to miss, but I truly did this for the betterment of our family. Thank you for always being there and understanding. I would like to thank my wife who has always been incredibly supportive and selfless through the process of working toward my doctorate. Lastly, I would like to thank Les and Joy David. Without their generosity and kindness, the completion of my doctorate would not have been possible.

Table of Contents

List of Tables

Chapter 1

Introduction

Junior colleges began in 1901 and have transitioned into what are now known as community colleges (Joliet Community College, n.d.). Community colleges serve a vital role in education. When a student is not prepared to attend a university, a community college serves as an excellent transition institution for the student, filling the void between high school and attending a university (King, 2012). Because of the limited number of degree options, community colleges are often considered transfer institutions, in which a student attends for a short period, completes general education courses, and ultimately transfers to a university (Chen, 2017).

Enrollment at community colleges in the United States has fluctuated over the last decade. Approximately 5.5 million individuals across the nation sought an associate degree in 2000 (Koebler, 2012). During the 2010-2011 school year, there were over 8 million students pursuing an associate degree at a community college (Koebler, 2012). During the academic years 2010 to 2014, enrollment at community colleges experienced steep declines, decreasing by approximately 700,000 students (Ma & Baum, 2016).

There are numerous reasons for students to attend community colleges. Often the cost of attending a university influences students to enroll at a community college (King, 2012). Historically, community colleges are public institutions that strive for affordability and access (Pannoni, 2015). On average, university tuition is triple the cost of attending a community college (King, 2012). Community colleges are a very affordable option as a starting point for a student who wants to obtain a bachelor degree (King, 2012).

Community colleges are less expensive than universities, but they are also open admissions institutions. Open admissions community colleges do not deny acceptance to students as long as they have a high school diploma or General Education Diploma (GED) (Nelson, n.d.). Regarding educational offerings, most community colleges can grant certificates and associate degrees (Learn.org, n.d.). Many students who attend a community college plan to transfer to a university after they complete an associate degree (List & Nadasen, 2014).

A transfer student is an individual who previously attended one institution, then transferred to another institution of higher education (Radwin & Horn, 2014). When students transfer from a community college to a public university, they are considered transfer students. Students are not disaggregated by associate degree completers and students who transfer prior to obtaining an associate degree. The lack of classification does not allow for proper identification of student success (persistence and graduation status) at the baccalaureate level among students who transfer to a university prior to obtaining an associate degree and associate degree completing students.

Background

Student success in higher education is the goal of every institution. College administrators agree persistence and degree completion are very important indicators of student success, but they admit these are not the only metrics of success (Guess, 2008). For this study, student success was defined by persistence (persisted, did not persist) and graduation status (graduated, currently enrolled, did not graduate). Cuseo (n.d.) defined persistence as student enrollment and retention at the same institution from one fall semester to the next fall semester. Persistence rates often serve as an early indicator to

institutional graduation rates, because if a student does not persist, that student cannot graduate (Oseguera & Rhee, 2009).

Students often begin their educational careers at a community college, with the intent to transfer to a university (List & Nadasen, 2014). Two studies identified a positive correlation between a student earning an associate degree at a community college and then persisting and earning a baccalaureate degree compared to students who did not obtain an associate degree prior to transfer (Crosta & Kopko, 2014; Taylor, 2015). The word "success" is a very broad, encompassing term that often has different meanings to different individuals. Success has been defined as "the accomplishment of an aim or purpose" (Success, 2017, para. 1). Colleges define student success in a variety of ways. For first-year college students, receiving acceptance into a college and then attending the institution is a "success." Approximately 85% of high school graduates go to some form of college within eight years of completing their high school diploma, with the goal of earning a credential or degree (Farkas, 2016). By earning a credential or degree, thus completing a goal, the student experiences success (Kuh, Kinzie, Buckley, Bridges, & Hayek, 2006). This definition of success helped define the term 'success' in the current study: persistence (a student attending one fall semester to the next fall semester at the same university) or baccalaureate degree attainment at one of the six public universities in the state of Kansas among Colby Community Colleges students who transferred prior to degree completion and students who transferred upon associate degree completion.

While student success is largely defined by students persisting and graduation status (Guess, 2008), however, there are several reasons students do not persist and graduate from community colleges. One of these factors is the lack of adequate funding

for higher education. A lack of funding can negatively affect student success because institutions cannot offer the full range of educational services (Castleman & Sullivan, 2016). Adequate funding allows institutions to provide services that enhance student success such as tutoring and advising services (Cooper, 2010).

Funding for higher education is currently at a critical limit. According to the Center on Budget and Policy Priorities (2016), since the recession of 2008, public colleges and universities have experienced a variety of budgetary reductions. The Center on Budget and Policy Priorities (2016) stated the following about the current funding of higher education in the state of Kansas:

Cuts to Kansas' higher education system are making college less affordable and threatening the quality of education students receive at the state's public 4-year and community colleges. Having a highly educated workforce is critical to our economic future, and we need a strong and high-quality higher education system to make that happen. (para. 1)

Dynarski (2015) reported strong academic advising and intensive tutoring services can have a positive impact on student graduation and persistence rates. Without adequate funding to support these types of services, colleges cannot properly serve student needs, which can result in lower graduation rates. College students drop out for a variety of reasons, but institutions with strong support services can help minimize the number of dropouts (Castleman & Sullivan, 2016; Cooper 2010).

Community colleges often struggle with graduation rates because of open admission requirements. Often community colleges serve students who are not as academically ready as students who start at a university (Beach, 2011). Students who

enroll in courses beyond their ability are at a disadvantage from the onset of their

educational career, and open admission institutions have a role in this issue (Fain, 2014).

Table 1 details national associate degree graduation rates from the National Center for

Education Statistics (NCES), which provides graduation data for associate and

baccalaureate degrees.

Table 1

National Associate Degree Graduation Rates 2011-2013

Year	Graduation Rate %
2011	20.2
2012	19.8
2013	19.5

Note. Adapted from "Graduation Rate from First Institution Attended Within 150 Percent of

Normal Time for First-Time, Full-time Degree/Certificate-Seeking Students at 2-year

Postsecondary Institutions, by Race/Ethnicity, Sex, and Control of Institution," by the National

Center for Education Statistics, n.d.-b. *Digest of Education Statistics*. Retrieved from

https://nces.ed.gov/programs/digest/d14/tables/dt14_326.20.asp

Graduation rates are calculated within the 150% timeframe expected for

graduation. Three years or 150% of the 2-year timeframe is the expectation for

completion of an associate degree (National Center for Education Statistics, n.d.-c).

According to the National Center for Education Statistics (n.d.-c), an associate degree is a

degree awarded in two years, but less than four years of full-time enrollment.

Calculations for degree completion utilize a 150% timeframe of expected graduation.

Data from 2013 were the most current information at the time of this study. The

Chronicle of Higher Education (n.d.) reported the national graduation rate for the 2-year

public sector was only 19% in 2013.

The public institutions in the state of Kansas include 19 community colleges, six

technical colleges, six public universities, and one municipal university (Kansas Board of

Regents, 2015). Reported in Table 2 are associate degree graduation rates from Kansas

community colleges from 2011 to 2013.

Table 2

Kansas Community College Associate Degree Graduation Rates 2011-2013

Year	Graduation Rate %
2011	28
2012	27
2013	28

Note. Adapted from "Foresight 2020: Graduation Rates by Institution & Sector*,"* by the Kansas
Board of Regents, 2015. Retrieved from https://www.kansasregents.org/resources/PDF/
Foresight2020/Foresight2020_January2015_Appendix_Graduation.pdf

Average Kansas community college associate degree graduation rates were reported by

each institution without decimal points, in whole number format, and without a

cumulative average provided. During 2011-2013, Kansas exceeded the national average

associate degree graduation rate by nearly 10% every academic year during the analyzed

timeframe (Kansas Board of Regents, 2015). Additionally, during 2011-2013, of the

number of community colleges in Kansas, two community colleges had lower graduation

rates than the national associate degree graduation rate (Kansas Board of Regents, 2015).

The selected institution for this study was Colby Community College, which was

founded in 1964 and is located in Colby, Kansas (Mosier, 2010). Colby Community

College offers four types of associate degrees that include an associate of science, an

associate of applied science, an associate of liberal arts, and an associate of general

studies (Colby Community College, n.d.). This study focused on the difference in

student success at the baccalaureate level between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree. Table 3 summarizes the associate degree graduation rates for Colby Community College between 2011 and 2013.

Table 3

Colby Community College Associate Degree Graduation Rates 2011-2013

Year	Graduation Rate %
2011	51
2012	48
2013	55

Note. Adapted from "Foresight 2020: Graduation Rates by Institution & Sector*,"* by the Kansas Board of Regents, 2015. Retrieved from http://www.kansasregents.org/ resources/PDF/Foresight2020/Foresight2020_2016-Appendix_GradRates.pdf

During 2011-2013, Colby Community College had among the highest graduation rates among all 19 community colleges in Kansas. Colby Community College's graduation rate was approximately two times higher than other community colleges in the state of Kansas (Kansas Board of Regents, 2015).

Statement of the Problem

Student success for many institutions has been defined by students' persistence and graduation rates (Kuh, Kinzie, Schuh, & Whitt, 2005). Data on student success provided to community colleges for students who transfer to a university do not designate or classify students by associate degree completers and individuals who transferred prior to obtaining an associate degree. The lack of research focusing on differentiating student success rates at the baccalaureate level (persistence and graduation rates) among community college transfer students, and associate degree completing students make it

difficult to gauge the effectiveness of the education received at community colleges. Furthermore, national data regarding associate degree persistence and graduation rates do not differentiate if an associate degree was earned at a community college, technical college, or university.

Current studies lack an analysis of student success (persistence and graduation rates at the baccalaureate level) between community college students who did not complete an associate degree and associate degree completing students who transfer to one of the six public universities in the state of Kansas. Transfer feedback reports provided by the Kansas Board of Regents do not separate and compare community college transfer and associate degree completing students' graduation and persistence rates. No transfer studies were identified in the state of Kansas that evaluated student success between community college students who did not obtain an associate degree and associate degree completing students at the baccalaureate level, utilizing persistence and graduation rates as the evaluating metrics. It is not currently known at Colby Community College if transfer students and associate degree completing students experience differing levels of student success after transferring to a public university in the state of Kansas.

Purpose of the Study

The purpose of this study was to investigate whether differences existed in student success (persistence and graduation status) between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree, enrolled at Colby Community College during 2011-2013. An additional purpose of this study was to examine to what degree student success was affected by student sex, race, and state of origin among Colby

Community College transfer students and associate degree completing students in their pursuit of a bachelor degree.

Significance of the Study

This study helped fill a void in research that illustrated the differences in student success at the baccalaureate level among students who completed an associate degree and transfer students who did not complete an associate degree. A study like this may serve as framework for other researchers who seek to understand the differences in student success among transfer students at the baccalaureate level. The results of this study may be of interest to educational administrators across the 2-year and 4-year sector as they evaluate and try to improve student success rates. Administrators at the Kansas Board of Regents may also be interested in the results of this study as they try to increase degree attainment and meet the goals outlined in Foresight 2020. Understanding the need for a community college transfer student to complete an associate degree before transferring to a university is paramount to student success at the baccalaureate level (Crosta & Kopko, 2014; King, 2003; Taylor, 2015).

The current study may interest students attending a community college, especially those who have the goal of completing a bachelor degree at a 4-year institution. The research may also be of interest to academic advisors who work with transfer students at both community colleges and universities. These results can also help determine if Colby Community College transfer students who did not complete an associate degree have higher or lower persistence and graduation rates compared to Colby Community College associate degree completers, when they transfer to one of the six public universities in Kansas. Additionally, this study could potentially influence the administration at Colby

Community College to further stress to students the importance of obtaining an associate degree prior to transferring to one of the six public universities in Kansas. This research demonstrated how student sex, race, and state of origin directly influence the student success of Colby Community College transfer and associate degree completing students in the pursuit of a baccalaureate degree.

Delimitations

The researcher narrowed the focus of the current study with the following delimitations:

1. Data collection was limited to students who were enrolled at Colby Community College during 2011-2013 and transferred to one of the six public universities in Kansas. This timeframe was examined because it included the most current data on persistence and graduation that could be calculated within the 150% timeframe.

2. Data for students who earned a technical certificate were not included in the study.

3. Data collection was limited to first-time college freshmen students at Colby Community College.

4. Data were included in the study only if a transfer student had completed a minimum of at least nine credit hours at Colby Community College prior to transferring to one of the six public universities in Kansas, which does not include Washburn University. Nine credit hours was utilized because the Kansas Board of Regents uses this metric to define a transfer student (Richardson, 2016).

Assumptions

The current study was conducted under the following assumptions:

1. All of the data collected from the National Student Clearing House were compiled and reported correctly.

2. All of the data from the Integrated Postsecondary Education Data System (IPEDS) were compiled and reported correctly.

Research Questions

This study identified the following research questions:

RQ1. To what extent is there a difference in student success at the baccalaureate level between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree?

RQ2. To what extent is the difference in student success at the baccalaureate level between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree affected by the sex (female, male) of the student?

RQ3. To what extent is the difference in student success at the baccalaureate level between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree affected by the race (non-minority, minority) of the student?

RQ4. To what extent is the difference in student success at the baccalaureate level

between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree affected by the state of origin (Kansas/other state) of the student?

Definition of Terms

The following definitions are provided to allow for a common understanding of terminology used throughout the study.

Associate degree completer. For this study, an associate degree completer was an individual who obtained one of four types of an associate degree from Colby Community College.

First-time freshman. A student who has never attended another college (Columbia State Community College, n.d.).

Graduation status. For this study, graduation status was categorized as an individual who graduated, is currently enrolled, or did not graduate.

Persistence. For this study, persistence is student enrollment and retention at the same institution from one fall semester to the next fall semester (Cuseo, n.d.).

Race. For this study, students were divided into the categories of American Indian or Alaska Native, Asian, Black or African American, Native Hawaiian or Other Pacific Islander (minority), and Caucasian (non-minority) (U.S. Census Bureau, 2017).

Sex. Sex is the classification of a student as male or female based on biological differences, without social consideration (Nobelius, 2004).

Student success. For this study, student success was defined as an individual persisting toward the completion of a baccalaureate degree or the successful completion of a baccalaureate degree (Kuh et al., 2006).

Transfer student. A transfer student is an individual who previously attended a prior institution, then transferred to another college (Radwin & Horn, 2014).

Organization of the Study

This research study is divided into five chapters. Chapter 1 focused on the introduction, statement of the problem, background, significance, purpose, delimitations, assumptions, research questions, and the definition of terms. Chapter 2 includes an examination of literature pertinent to the background of the topic that includes the history of community colleges, community college student persistence, graduation rates, community college transfer studies at the baccalaureate level, and the history of Colby Community College. Provided in chapter 3 are an overview of the research design, selection of participants, measurement, data collection procedures, data analysis and hypothesis testing, limitations, and the summary of the chapter. Chapter 4 includes the analyses conducted to test the hypotheses. Chapter 5 concludes the study by providing a study summary, an overview of the problem, the purpose statement and research questions, review of the methodology, major finding, finding related to the literature, conclusions, implications for action, recommendations for future research, and concluding remarks.

Chapter 2

Review of the Literature

Community colleges have served many different roles in higher education, from promoting inclusion and access to serving underrepresented students. The evolution of community colleges has been a unique transition. Community colleges have evolved from humble beginnings as transition colleges, to serving the most students in the post-secondary sector. To better understand the roles of community colleges, it is imperative to understand their history and the missions they serve. This chapter focuses on the history, missions, and roles of community colleges. Additionally, the chapter examines student success, community college persistence rates, community college transfer students, and community college graduation rates. Lastly, the history of Colby Community College and the rationale for selection of Colby Community College as the location of this study are provided.

The History and Mission of Community Colleges

Community colleges originally were established in 1901 and were known as junior colleges (Joliet Community College, n.d.). Joliet Junior College was the first junior college in the United States (Joliet Community College, n.d.). At the time of its creation, Joliet Junior College was labeled an experimental extension of high school. Even though the concept of the program had been in place since 1901, it did not officially become Joliet Junior College until 1916, when the Board of Trustees named the program. The institution provided a transition education for students who were not quite ready to attend a university but were still interested in seeking post-secondary education. Joliet

Junior College was organized as a 2-year institution that mirrored the first two years of attending a university (Joliet Community College, n.d.).

Community colleges changed education by providing an alternative to the traditional option of attending a university (Beach, 2011). They changed education by being able to rapidly respond to student needs and the needs of the economy. According to the American Association of Community Colleges ([AACC], n.d.-a), no segment of higher education can adapt to the needs of the community and workforce like the community college.

The primary purpose of a junior college was to prepare students for the transition to the university setting (Beach, 2011). In addition, community colleges also specialized in technical training and other stand-alone degrees, causing junior colleges to change their roles and ultimately their names (Beach, 2011). As the roles of the junior college changed, the name of junior college was no longer appropriate. In the late 1960s and 1970s, junior colleges were renamed community colleges (Beach, 2011).

As time progressed, the mission of community colleges evolved out of necessity to meet the ever-changing demands of students. Education in the early 1900s primarily focused on general education; however, in the 1930s community colleges began focusing on job oriented programs that would reduce unemployment ([AACC], n.d.-a). As of 2008, community colleges prepared over half of the registered nurses in the United States and over 80% of paramedics, emergency medical technicians, firefighters, and police officers (Boggs, 2010). Community colleges also continue to promote inclusion and serve the most diverse student population in higher education (Boggs, 2010). "Community colleges provide associate degrees, certificate programs, developmental

courses, vocational programs, distance learning opportunities, flexible scheduling, childcare, veteran resources, counseling, and employment for the communities they reside in" (Darby-Hudgens, 2012, para. 1).

By 2015, there were over 1,100 community colleges in the United States (AACC, 2015). According to the AACC (2015) in fall 2013, community college enrollment made up 46% of total U.S. undergraduate enrollment and 41% of first-time first-year students. Community colleges function in both a private and public manner (Office of Career, Technical, and Adult Education [OCTAE], n.d.). Public colleges are primarily funded by a state government and are larger in size (Department of Homeland Security, 2013). Private colleges operate as non-profit organizations that do not receive primary funding from a state government (Department of Homeland Security, 2013). State aid helps subsidize the cost of education at public institutions, often resulting in much lower tuition rates than private universities (AACC, n.d.-b).

The Roles of Community Colleges

Community colleges serve nearly half of all undergraduates in the United States (AACC, n.d.-a). Because of their inclusive nature, the roles of community colleges are diverse and unique. These roles include providing an affordable education, offering appropriate courses, accepting all students through open admission policies, and serving diverse student populations (AACC, n.d.-b). Each of these roles is explained in the following paragraphs.

Affordability. Community colleges offer students an affordable education (College Atlas, 2017). They are traditionally a much less expensive option for attending the first two years of college. The average annual tuition for community colleges in the

United States is $3,430 compared to the average public university cost of $9,410, approximately 36% of the price to attend a public university (AACC, n.d.-a; King, 2012). Because of the dramatic price difference, the cost of attendance has become a primary focus for students when deciding what institutions they will be attending (King, 2012). Compared to other sectors of education, community colleges serve the highest percentage of low-income students (Kolodner, 2016).

Community college course offerings. The first two years of college are primarily general education courses, one of the reasons why community colleges serve nearly half of all undergraduate students (OCTAE, n.d.). General education courses include science, math, English, social sciences, history, government, and humanities. Community colleges also offer a variety of career and technical education programs. A large percentage of students enter community colleges with no clear goals or knowledge of how to identify a career path for themselves (Karp, 2013). Because of this lack of knowledge, many students use the first two years of college as a time to establish their interests and help decide what career path they would like to take (King, 2012). Community colleges can help guide students on curricular pathways and provide advising specific to the student's unique goals and interests (Karp, 2013).

Community colleges also serve the role of providing students smaller classes than universities. Students who attend classes at community colleges are provided more opportunities to interact with faculty and receive direct feedback from their professors (College Atlas, 2017). While some universities offer smaller classes and faculty interaction opportunities, community college faculty are not research-based and can devote their attention to instruction (AACC, n.d.-b). Smaller class sizes provide students

greater opportunities for engagement and participation in the classroom (College Atlas, 2017). The average class size at community colleges is between 25-30 students (AACC, n.d.-b).

At universities, teaching assistants often teach general education courses, while at community colleges qualified faculty teach all courses leading to more personal attention and higher levels of engagement (AACC, n.d.-b). Engagement is critical to student success because when students are engaged, it allows them to explore their curiosity and creativity, ultimately allowing them to perform better academically (Kuh et al., 2005; Strong, Silver, & Robinson, 1995). Community colleges are known for their smaller classes and faculty whose primary responsibility is teaching (AACC, n.d.-b).

Open admissions institutions. The roles of community colleges focus on inclusion and an education for all students regardless of their educational abilities (Shannon & Smith, 2006). The majority of 2-year colleges in the U.S. are open-admissions institutions, which directly aligns with their mission of serving all students not just the students who meet specific qualifications (Shannon & Smith, 2006). "As community colleges cope with the external forces, while at the same time attempting to meet their mission of open access, their work becomes increasingly complex" (Walters & McKay, 2005, p. 51).

In 1999-2000, 62% of the 1,462 community and technical colleges in the U.S. were open admissions, in contrast to 7.5% open admission public 4-year universities (OCTAE, n.d.). The goal of community colleges was explained in the following manner:

When community colleges were first created, their goal was to open up postsecondary education to everyone, and they did that very well. They made it

easy to enroll, and they offered many different courses and options. But it created a very complex system. (Kolodner, 2015, para. 4)

Open admission requirements do not allow community colleges to filter students and preclude them from attending programs where they may not be as successful as students who have met the more stringent entrance requirements of a 4-year institution (Shannon & Smith, 2006). Admission requirements for acceptance into a 4-year college often include an institutionally-determined ACT/SAT score, students taking a certain curriculum while in high school, or graduating in the top percentage of the class. The majority of community colleges as open admissions do not require these admission requirements (Shannon & Smith, 2006).

The open-door policy of community colleges ensures students who represent varying demographic have the opportunity to receive an education (Shannon & Smith, 2006). When compared to other sectors of education, community colleges serve the highest percentage of students who were not academically prepared for college. Jusziewicz (2014) reported that over 50% of students at community colleges had taken at least one remedial course. Stricter admissions policies could increase student persistence, transfer rates, and graduation rates; however, they would also potentially alienate a population of students who are already underserved. Community colleges have been resistant to the idea of stricter admission requirements because it aligns with their mission to serve students, regardless of ability (Shannon & Smith, 2006).

Community college student populations. Community colleges serve a demographic of students who are often thought to be underserved and underrepresented in higher education. They also serve a diverse student population (AACC, n.d.-b;

California Community Colleges Student Success Task Force [CCCSSTF], n.d.). As of fall 2013, community colleges enroll 52 percent of black undergraduate students, 57 percent of Hispanic undergraduates, 43 percent of Asian/Pacific Islanders, and 61 percent of Native American students (AACC, 2015). Universities or 4-year institutions also serve these types of students, they just do not generate the same level of enrollment percentages or provide the same level of accessibility as a community college (Cooper, 2010). Students who fall under these categories need unique and more frequent support opportunities (Kolesnikova, 2009; Pelletier, 2010). A high percentage of community college students are non-traditional students (Jusziewicz, 2014). According to the NCES (n.d.-a):

> Exactly what constitutes a nontraditional student has been the source of much discussion in recent research. Most often age (especially being over the age of 24) has been the defining characteristic for this population. Age acts as a a surrogate variable that captures a large, heterogeneous population of adult students who often have family and work responsibilities as well as other life circumstances that can interfere with successful completion of educational objectives. (para. 1)

Non-traditional students make up approximately 87.9% of all community college students, compared to 4-year institutions where only 56.8% of students were identified as non-traditional or having minimally non-traditional traits (Jusziewicz, 2014). Non-traditional students have difficulty being successful in school because often they are not accustomed to a traditional classroom format, the length of semesters, and balancing school while working (Pelletier, 2010). These adjustments can make it difficult for a

non-traditional student to be successful. Additionally, non-traditional students often do not have access to supportive services that are available in the traditional timeframe of 8:00 a.m. to 5:00 p.m. (Pelletier, 2010). Non-traditional students are at a much higher risk of being non-completers, which greatly hinders community college persistence and graduation rates (Shannon & Smith, 2006).

According to the American Association of Community Colleges (AACC, 2014), 36% of students attending community colleges are first-generation college students. Although there are multiple definitions, a first-generation college student can be classifed as an individual who is the first in the family to attend college and earn a degree (Smith, 2015). If a student's parents attended a college, earned credit hours, but did not complete a degree, that student is still considered a first-generation college student (Smith, 2015). First-generation college students need additional support (AACC, 2014; Smith, 2015).

Community colleges also serve a high portion of low socioeconomic students. A high percentage of low-income students start at the community college level rather than beginning their educational career at a university like their more affluent peers (Boggs, 2010). According to the AACC (2014), approximately 33% of students received a Pell Grant while attending a community college during the 2012-2013 academic year. During the 2012-2013 academic year, 32% of students at public 4-year institutions received a Pell Grant. The percentage of Pell-eligible students between the two sectors does not represent a significant difference but does illustrate the fact that community colleges serve a higher percentage of low socioeconomic students (College Board, n.d.). A high percentage of minority students are also considered low socioeconomic students, which is not exclusive to community colleges alone (U.S. Department of Education, n.d.).

Students who are low socioeconomic are more in danger of not persisting and transferring compared to more affluent students in all sectors of higher education (Reason, 2003; Reason, 2009, Walpole, 2003). This situation is not unique to community colleges. Furthermore, low socioeconomic students are even more at risk of not obtaining their baccalaureate degree after transferring from a community college as evidenced by 36% of low-income students completing a bachelor of arts, compared to 44% of wealthy students (Kolodner, 2016).

To increase community college persistence, transfer, and graduation rates, special attention is given to academic guidance and advising (Cooper, 2010). These services and efforts are not exclusive to community colleges, but they are especially important at community colleges because of the number of students who enter community colleges with academic deficiencies (Cooper, 2010). When community college students take student success courses, they experienced much greater levels of persistence (Karp & Cho, 2012). A student success course is geared toward first-time students and informs the students about institutional services and opportunities (Karp & Cho, 2012). Financial aid counseling is also readily available to community college students. While these services are available at 4-year institutions, on average, there is a greater financial need for community college students (Cooper, 2010). Again, none of these support services are exclusive to community colleges, but they are vitally important for community college students to be successful.

Student Success

Student success is a primary concern for higher education institutions (Kuh et al., 2005). Every institution wants to see its students be successful. Increasing student

success is a continuous goal that institutions strive to accomplish and maintain (Cooper, 2010). Student success is not solely dependent on the student; institutions are also responsible for helping students be successful. Ultimately, student success defines institutional success (Kuh et al., 2005). Reviewed in this section is how research defines student success, how success is defined in this study, and how accrediting bodies examine student success.

The definition of student success can be defined in a variety of ways. Some students experience success when they achieve satisfactory grades, continue their education, or earn a degree (Kuh et al., 2005). Every student has a unique set of goals (CCCSSTF, n.d.). Students may only seek a few classes or an individual certification to meet their definition of success or desired goals (CCCSSTF, n.d.). The disparity in institutional goals and student goals makes it very difficult to quantify student success accurately.

Student success is often thought to be predicated on academic achievement (Kuh et al., 2005). Often, success is correlated with a student receiving good grades and earning a degree. However, community college students often exit school without graduating. Non-graduating student numbers negatively affect persistence, transfer, and graduation rates for the institution. Students leave community colleges for a variety of reasons, which include finding a job, completing their goal, or life circumstances (CCCSSTF, n.d.). Kuh et al. (2005) described one component of student success as academic achievement, earning good grades, completing a semester, and ultimately progressing toward the completion of a degree. Despite varied research claims, the prevailing opinion is that student success is persisting toward the completion of a degree

or earning a degree (Kuh et al., 2005; Kuh et al., 2006; McPherson & Schapiro, 2009).

Without knowing the true reason why a student exits college, it makes it very difficult to

evaluate if the student obtained the goal and ultimately experienced success.

For this study, the researcher identified student success as an individual persisting

toward the completion of a baccalaureate degree or the successful completion of a

baccalaureate degree. Persistence is student enrollment and retention at the same

institution from one fall semester to the next fall semester (Cuseo, n.d.). A transfer

student is a student who originally attended a community college prior to transferring to a

university (Radwin & Horn, 2014). Graduation rates can be determined by the

percentage of students who earn a baccalaureate degree. These rates are then calculated

by the percentage of students who start college (denominator) divided by the number of

students who graduate (numerator). This calculation provides a graduation percentage

(Florida State College at Jacksonville, 2014). These metrics may be considered

indicators of student success because students often attend college with the goal of

graduating.

Despite the uncertainty and ambiguity revolving around the reason why a student

exits a community college, persistence, transfer, and graduation rates remain important

(CCCSSTF, n.d.; Darby-Hudgens, 2012; Kuh et al., 2005). Currently, not nearly enough

community college students persist, transfer, and graduate (Boggs, 2010). Community

colleges accept most students, making it nearly impossible to ensure every student can

persist and ultimately graduate (Shannon & Smith, 2006). Therefore, persistence,

transfer, and ultimately graduation rates at the community college level are significantly

lower than the rates at the university level (Walters & McKay, 2005). If colleges have

poor student persistence, transfer, and graduation rates, it will not only damage their credibility, but it can also negatively affect their standing with accrediting bodies.

Student persistence, transfer, and graduation rates are a primary concern of regional accrediting bodies. Accrediting bodies are expected to serve as quality assurance for higher education institutions and will continue to analyze institutions with low graduation rates (Kreighbaum, 2016). The Higher Learning Commission (n.d.) reviews faculty qualifications to ensure they are adequately prepared in their field of study to help properly educate students. Additionally, accrediting agencies review educational standards, ensure institutions engage in continuous improvement, and provide annual monitoring of financials (Higher Learning Commission, n.d.). All of these measures work to improve persistence, transfer, and graduation rates. If an institution has low, sustained persistence, transfer rates, and graduation rates, it may be subject to review by an accrediting body and could potentially have its accreditation status put in jeopardy.

Community College Student Persistence

Student persistence is one of the most important goals for higher education institutions; students must persist to graduate (Reason, 2009). Persistence rates serve as a pre-cursor for institutional graduation rates and allow colleges to identify student groups that are not persisting to graduation (Oseguera & Rhee, 2009). Persistence is difficult to define because many researchers and institutions use the terms persistence and retention interchangeably (Reason, 2009). Provided in this section are examples of persistence data and factors that influence persistence.

The National Student Clearinghouse Research Center ([NSCRC], 2016) identified the following persistence rates for the 2-year sector during 2011-2013 (see Table 4).

Table 4

Two-Year Sector Persistence Rates 2011-2013

Year	Persistence Rate %
2011	57.7
2012	59.0
2013	59.8

Note. Adapted from *"First-Year Persistence and Retention Rates for Students Who Start College in Two-Year Public Institutions,"* by the National Student Clearinghouse Research Center, n.d. Retrieved from https://nscresearchcenter.org/snapshotreport-persistenceretention22/

The years in which these studies were conducted were the most current years available because data is collected and reported in 3-year cohorts. In 2009, the NSCRC (2016) identified 2-year persistence rates as 59.8%, dropping to 58.3% in 2010. The 5-year low for persistence rates at public 2-year institutions occurred in 2011 at 57.7, but experienced gains of nearly 1% in the subsequent years 2012 and 2013 ([NSCRC], 2016.). These rates represent a positive trend that 2-year public institutions experienced higher persistence rates in recent years.

There are several variables that influence student persistence rates. Some of these variables include gender, race, and socioeconomic status (Reason, 2003). Female students persist at a higher rate than their male counterparts (Oseguera & Rhee, 2009). List and Nadasen (2014) also reported that student gender and race had a direct influence on student persistence. Oseguera and Rhee (2009) reported that student race influenced student persistent rates, with African-American, Latino, and Native American students

not persisting at a commensurate rate compared to Caucasian and Asian students. Regardless of a student being at a 2-year or 4-year institution, research showed that Asian and Caucasian students persisted at higher rates (Reason, 2003).

The influence of socioeconomic status heavily influences student persistence rates (Walpole, 2003). Reason (2009) reported that socioeconomic status had a greater impact on student persistence than student race. Students who came from low socioeconomic environments were far less likely to persist in their education regardless of race (Reason, 2009). Additionally, research shows students from low socioeconomic backgrounds do not persist at the same rate as their affluent peers before and during college (Oseguera & Rhee, 2009). Community colleges continue to serve the highest percentage of low socioeconomic students, which directly affects student persistence rates (Kolodner, 2016).

Lloyd and Eckhardt (2010) conducted research that focused on increasing retention rates of science majors at a community college. Persistence rates are often reported as retention rates and used interchangeably (Reason, 2009). Approximately half of all students who received a Bachelor of Science or Masters of Science began their academic careers at a community college in 2004 (Lloyd and Eckhardt, 2010). Lloyd and Eckhardt hypothesized if community colleges were able to improve retention rates in science, it would ultimately influence science majors' success at the university level. The research was limited to community college students who studied science. The study did not focus on the student success of associate degree and non-associate degree completing transfer students.

While there are certain variables such as gender and race that help predict student persistence, there are other variables that are not as easy to identify (List & Nadasen, 2014; Reason, 2003; Reason, 2009). These variables for persistence include social integration, institutional commitment, academic integration, goal commitment, and ultimately the intent to persist (List & Nadasen, 2014). Of the variables mentioned, several are not institutionally controlled (List & Nadasen, 2014). Additionally, when comparing supportive services between community colleges and universities, universities often have larger budgets and have the ability to have more support services available to help students persist and stay retained while working toward achieving their educational goals (Shannon & Smith, 2006).

Baccalaureate Success of Community College Transfer Students

Community college transfer students originally attend a community college, then transfer to a 4-year college (Radwin & Horn, 2014). The majority of students who attend a community college do so with the intention of later transferring to a university to pursue a baccalaureate degree (List & Nadasen, 2014). Because of these intentions, community colleges are required to be flexible and accommodating to student needs while remaining cognizant of student goals (Beach, 2011). Community college students transfer at different times in their educational career based on their desired educational outcome. Some students attend a community college to complete a few general education courses before transfer, and some attend a community college to complete an associate degree followed by transfer to a university (CCCSSTF, n.d.).

Community colleges have been the subject of discussion and criticism regarding transfer success. Transfer students (i.e., those who have earned a degree at a community

college then transferred to a university) are often thought to be inadequately prepared for developmental coursework or not ready for the 4-year environment according to UT News (2016). Schaffhauser (2016) reported that 86% of community college students stated they felt academically prepared, but nearly seven out of 10 students had to take at least one developmental course. Some university faculty members used early assessment to determine student preparedness, but even after the faculty members determined students were not prepared for advanced coursework, only 6% of the faculty reported making changes to the students' schedule (UT News, 2016). If students are in courses that are beyond their ability or realm of knowledge, it greatly hinders their ability to be academically successful. The Center for Community College Student Engagement (2016) reported that many community college students did not have successful K-12 experiences and if they failed in the first semester of developmental courses, they had very little chance of being successful in college. "According to the National Student Clearinghouse, only 39 percent of community college students earn a certificate, associate degree or bachelor degree within six years" (UT News, 2016, para. 2).

In contrast, research has demonstrated that the academic achievement of community college transfer students is equal to or better than that of students who originally attend a university. The College Atlas (2017) reported that many community colleges academically outperform their university peers. Also, the Community College Research Center (2015) stated that transfer students perform at nearly an equal rate to their university peers.

King (2003) also refuted the report that community college students are not as academically prepared as students who start their academic career at a university.

Transfer students from community colleges performed at the same rate as students who began at Mississippi State University's Teaching program (King, 2003). This study did not include all majors and did not separate transfer and associate degree completing students who transferred prior to obtaining an associate degree

The comparative success of community college associate degree completing students and community college students who transfer to a university prior to completing an associate degree remains largely unknown as research has only produced a few studies analyzing in select states. These studies across different states have demonstrated that students who earn their associate degree are statistically more likely to earn their baccalaureate degree (Crosta & Kopko, 2014). Studies from Ohio and Hawaii have reported that students who earned an associate degree before transferring were statistically more likely to earn a baccalaureate degree than a community college transfer student (Taylor, 2015).

Taylor (2015) reported that 59% of Ohio community college students who completed an associate degree before transferring to a university earned a baccalaureate degree. In contrast, 44% of non-degree holding students who transferred to a university earned a baccalaureate degree within a 150% timeframe of starting the degree (Taylor, 2015). Taylor also reported that 62% of students in Hawaii who completed an associate degree before transferring to a university graduated with a baccalaureate degree. Transfer students in the same state who had not completed an associate degree earned a baccalaureate degree 52% of the time (Taylor, 2015).

Crosta and Kopko (2014) examined community college student transfer data within a single state, who began at a community college during fall 2002 and summer

2005. These students then transferred to a four-year instiutiton within six years of entering a community college. Their findings revealed associate degree completing students were more likely to earn a bachelor's degree, when compared to non-associate degree completing students (Crosta & Kopko, 2014). However, the same study reported that students who earned an associate of applied science at a community college were no more statistically likely to earn a baccalaureate degree than non-associate degree completing students (Crosta & Kopko, 2014). An associate degree in applied science is more technically orientated and does not focus on being transferable.

Weber (2009) analyzed 184 graduates of 19 Kansas community colleges who transferred to the University of Kansas. He compared transfer students to 200 students who began baccalaureate studies at the University of Kansas (Weber, 2009). The research did not find any significant difference in academic achievement and persistence between community college transfer students and native university students who began their studies at the University of Kansas (Weber, 2009). The study did not specifically focus on the student success of associate degree completing and non-associate degree completing transfer students.

Fain (2012) reported that only one in five community college students transfer to a university. Although the reported 20% of students transferring is a very low percentage, 60% of those students who do transfer earn a bachelor degree within four years of starting their post-secondary education (Fain, 2012). According to Fain (2012), this percentage would increase to 71% if students obtained an associate degree before transferring to a university. Fain suggested the best way for a transfer student to be successful is to earn an associate degree before transferring to a university.

States that had strong articulation agreements between community colleges and universities yielded higher percentages of low-income students who obtained a bachelor degree within six years of beginning their education (Kolodner, 2016). An articulation agreement is made between institutions and does not require the student to make individual arrangements for transferring credits (CollegeTransfer.Net, n.d.). This agreement reduces the burden on students who are trying to transfer courses.

Community College Student Graduation Rates

Community colleges face criticism for their poor graduation rates (Kolodner, 2015). Approximately only four out of 10 community college students will earn a certificate, associate, or bachelor degree within six years of beginning their education (UT News, 2016). "Overall, only 14% of all students who entered a community college in 2007 transferred and then earned a 4-year degree within six years" (Kolodner, 2016, para. 5). Graduation rates at community colleges are traditionally much lower at community colleges because community colleges have open admissions and serve a high percentage of minority, non-traditional, and low socioeconomic students (Cooper, 2010). These categories of students are at an increased risk of not graduating (Reason, 2009). Included in this next section is an explanation of how graduation rates are calculated and community college graduation statistics.

Graduation rates until the 1970s were calculated from the standard length of the degree: two years for an associate degree and four years for a baccalaureate degree (Kuh et al., 2005). Since the 1970s, graduation rates have been calculated from the 150% timeframe for expected completion (Kuh et al., 2005). The timeframe of 150% provides students an additional year or two outside of the specified timeframe of an associate

degree or bachelor degree to complete. This change made the anticipated completion of an associate degree three years and the expected period for completion of a bachelor degree six years.

The NCES (n.d.-b) provided associate degree graduation rates during 2011-2013 (see Table 1). These graduation rates report that approximately one out of five students graduated within the 150% timeframe or three years for expected completion of an associate degree (National Center for Education Statistics, n.d.-a).

Data regarding community college student persistence and graduation rates among the community college sector is contradictory depending upon geographic region. Some states, such as Kansas, have demonstrated success with community college transfer students performing at or exceeding the level of native students starting their academic career at the university level (Kansas Board of Regents, 2015). Included in Table 2 are Kansas community colleges' average associate degree graduation rates from 2011-2013. Colby Community College has had among the highest graduation rates among community colleges in the state of Kansas 2011-2013 (Kansas Board of Regents, n.d.). North and South Dakota have over a 40% graduation rate in the community college sector (The Chronicle of Higher Education, n.d.). However, other states have a precipitous drop off in student success when comparing students who start at the university level to transfer students from the community college level (The Chronicle of Higher Education, n.d.). Vermont, South Carolina, Indiana, and Ohio all collectively have less than a 13% graduation rate (The Chronicle of Higher Education, n.d.).

The History of Colby Community College

The idea of creating a community college in northwest Kansas began in the early 1930s. The Eurich Report (1962) to the Kansas Board of Regents suggested the concept of an "open door" policy to ensure educational opportunity regardless of the geographic location, intensified the conversations of starting a junior college in the area (Colby Community College, 2012). Thomas County residents approved the establishment of the junior college in 1962, by a nearly nine to one margin (Mosier, 2010). It was the first junior college to be approved by the Kansas Board of Regents and was financed using a five-mill levy (Mosier, 2010).

Colby Community College was established in 1964. The establishment of the college served a vital need to meet the educational needs of Western Kansas (Mosier, 2010). The institution resides approximately 103 miles from Fort Hays State University and 100 miles from Garden City Community College. Originally, Colby Community College was to be a branch of either Kansas University, Kansas State University, or Fort Hays State University, not a standalone institution (Mosier, 2010). Colby Community College has held accreditation with the North Central Association of Colleges, later known as the Higher Learning Commission, since 1972 (Mosier, 2010).

Colby Community College's primary focus is on the completion of associate degrees and technical certificates, with over 60 programs of study available (Colby Community College, n.d.). Academic programs range from technical certificates that can be completed in 17 credit hours to 41 credit hours, to associate degrees that are 62-64 credit hours (Colby Community College, n.d.). The average credit hours of an associate degree at Colby Community College is 62 credit hours (Colby Community College, n.d.). Colby Community College offers four associate degrees: Associate of Arts, Associate of

Science, Associate of Applied Science, and Associate of General Studies (Colby

Community College, n.d.). The Kansas Board of Regents (2015) reported Colby

Community College's associate degree graduation rates from 2011-2013 (see Table 3).

This study examined persistence and graduation status at the baccalaureate level between

Colby Community College transfer students who complete an associate degree and Colby

Community College transfer students who did not complete an associate degree who

transferred to one of the six public universities in Kansas. The study will focus on

students who were enrolled at Colby Community College, during 2011-2013.

Summary

Explored in this chapter were the history and mission of community colleges, the

role of community colleges, and student success. Also summarized were community

college persistence rates, transfer studies, and graduation rates, as well as the history and

rationale for the selection of Colby Community College. In chapter 3 the methodology

used for this study including research design, selection of participants, measurement, data

collection procedures, data analysis and hypothesis testing, limitations, and a chapter

summary will be presented.

Chapter 3

Methods

The purpose of this study was to investigate whether differences existed in student success (persistence and graduation status) between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree. Every student analyzed in the data was a first-time freshman at Colby Community College, enrolled during 2011-2013, and completed at least nine credit hours prior to transferring to a public university in Kansas. An additional purpose of this study was to examine to what degree student success was affected by student sex, race, and state of origin among Colby Community College transfer students and associate degree completing students in their pursuit of a bachelor degree. Provided in this chapter is an overview of the research design, selection of participants, measurement, data collection procedures, data analysis and hypothesis testing, and limitations of the study.

Research Design

A quantitative approach using archival data was the selected research design. Creswell (2014) defined this type of research as "an approach for testing objective theories by examining the relationships among variables. These variables, in turn, can be measured, typically on instruments, so that numbered data can be analyzed using statistical procedures" (p. 4). This type of analysis was conducted under the postpositivist assumption which identifies an issue and the need to examine how it potentially affects the outcome (Creswell, 2014). The dependent variables for this study were student success as measured by persistence (persisted, did not persist) and

graduation status (graduated, currently enrolled, did not graduate) at the baccalaureate level within the 150% timeframe at one of the six public universities. Graduation status had to include the variable of currently enrolled, because depending upon the time of transfer, a student could still be within the 150% timeframe and still not currently graduated at the time of the study. The independent variables were transfer status (degree, no degree), student sex (female, male), race (non-minority, minority) and state of origin (Kansas, other).

Selection of Participants

For this study, the researcher utilized non-probability sampling, which "does not rely on the use of randomization techniques to select members" (Center for Innovation in Research and Teaching, n.d., para 3). The sample for this study included Colby Community College students who transferred to one of the six public universities in the state of Kansas and were enrolled during 2011-2013. Every student analyzed was a first-time freshman at Colby Community College and completed at least nine credit hours prior to transfer. Data for students who earned a technical certificate were not included in the sample.

Measurement

Student success was measured by analyzing Colby Community College transfer and associate degree completing students, utilizing persistence (persisted, did not persist) and graduation status (graduated, currently enrolled, did not graduate) at the baccalaureate level, at one of the six public universities in Kansas. Student persistence was measured by a student attending a public university one fall and returning to the same institution the next fall. Graduation status was separated into three categories:

graduated, currently enrolled, and did not graduate. The data were separated by students who exited Colby Community College and transferred to a public university who either completed an associate degree or did not complete an associate degree. Students were categorized by sex: female and male. An additional variable of race was classified as minority (American Indian or Alaska Native, Asian, Black or African American, Native Hawaiian or Other Pacific Islander) (U.S. Census Bureau, 2017) and non-minority students (White or Caucasian). State of origin was categorized as Kansas or other state.

Persistence and graduation status were calculated utilizing a 150% timeframe for the expected time for completion (Kuh et al., 2005). A 150% timeframe means a 4-year baccalaureate degree is allotted six years for completion. For example, if a student transferred after one year at Colby Community College, the student would still have five years to complete the baccalaureate degree. Graduation status (graduated, currently enrolled, did not graduate) was categorized within the 150% timeframe.

According to Lunenburg and Irby (2008), "Validity is the degree to which an instrument measures what it purports to measure" (p. 181) and "reliability is the degree to which an instrument consistently measures whatever it is measuring" (p. 182). The data collected were based on actual behaviors and no scales or subscales were constructed. Therefore, the validity and reliability of the measurement were not of concern.

Data Collection Procedures

In March 2017, the researcher requested permission for data collection from the Baker University Institutional Review Board (IRB) (see Appendix A) and received approval in April 2017 (see Appendix B). Prior to beginning data collection, a request to use Colby Community College student data and the name of the institution were

submitted to the Colby Community College Board of Trustees in August 2016. The

Board of Trustees unanimously approved the request (see Appendix C). Archival data

were collected from Colby Community College transfer students who were enrolled at

Colby Community College during 2011-2013 and then transferred to a public university

in the state of Kansas. All students in the study were first-time freshman. Student data

regarding demographics, persistence status, transfer status, and graduation status as of

August 2017 were provided to the researcher by the Colby Community College Director

of Institutional Effectiveness.

The source of data was the National Student Clearinghouse Research Center

(NSCRC). Specifically, the researcher utilized a report provided by the Integrated

Postsecondary Education Data System (IPEDS), which is collected annually by the

NSCRC. The Director of Institutional Effectiveness at Colby Community College is the

individual who reports Colby Community College's student data to IPEDS (Colby

Community College, 2016).

Participant data from Colby Community College were reported based on an

anonymous institutional student ID number. The anonymous ID numbers were generated

by the Colby Community College data system and were provided to the researcher by the

Director of Institutional Effectiveness. Transfer data were tracked by the National

Student Clearinghouse Research Center, utilizing student social security numbers. These

social security numbers were then used by the Colby Community College Director of

Institutional Effectiveness and linked back to the original anonymous student ID number

assigned by Colby Community College. Social Security numbers were never provided to

the researcher within the study. Only original anonymous student ID numbers were

provided to the researcher by the Director of Institutional Effectiveness. There was no personally identifiable information within the data. Data considerations were held to the highest of ethical standards. Anonymity and confidentially were strictly adhered to within the study. As a result, the study posed no potential harm to the students whose data were included for analyses.

Data Analysis and Hypothesis Testing

Hypothesis testing involved analysis of the statistical difference in student success (graduation and persistence status) at the baccalaureate level among community college students based on exit status (completed an associate degree, did not complete an associate degree). The researcher utilized the chi-square test of independence. A chi-square test of independence is utilized to determine if there is a significant relationship between two nominal variables. Statistical analysis was conducted utilizing IBM® SPSS® Statistics Base GradPack 24 for Windows.

RQ1. To what extent is there a difference in student success at the baccalaureate level between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree?

H1. There is a difference in student success at the baccalaureate level as measured by student persistence between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree.

A chi-square test of independence was conducted to test H1. The level of significance was set at .05. The two categorical variables included in the analysis were

student community college exit status (completed an associate degree, did not complete an associate degree) and student success (persisted, did not persist). Observed frequencies were compared to those expected by chance.

H2. There is a difference in student success at the baccalaureate level as measured by student graduation status between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree.

A chi-square test of independence was conducted to test H2. The level of significance was set at .05. The two categorical variables included in the analysis were student community college exit status (completed an associate degree, did not complete an associate degree) and student success (graduated, currently enrolled, did not graduate). Observed frequencies were compared to those expected by chance.

RQ2. To what extent is the difference in student success at the baccalaureate level between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree affected by the sex (female, male) of the student?

H3. The difference in student success at the baccalaureate level as measured by student persistence between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree is affected by the sex (female, male) of the student.

Prior to conducting the hypothesis tests for H3, the data were disaggregated by student sex (female, male). The level of significance for each test was set at .05. A chi-square test was conducted to test for a difference in female student success at the

baccalaureate level as measured by student persistence between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree. The two categorical variables included in the analysis were student community college exit status (completed an associate degree, did not complete an associate degree) and student success (persisted, did not persist). Observed frequencies were compared to those expected by chance. A chi-square test was conducted to test for a difference in male student success at the baccalaureate level as measured by student persistence between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree. The two categorical variables included in the analysis were student community college exit status (completed an associate degree, did not complete an associate degree) and student success (persisted, did not persist). Observed frequencies were compared to those expected by chance. The results of the two hypothesis tests were compared to address differences based on student sex.

H4. The difference in student success at the baccalaureate level as measured by student graduation status between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree is affected by the sex (female, male) of the student.

Prior to conducting the hypothesis tests for H4, the data were disaggregated by student sex (female, male). The level of significance for each test was set at .05. A chi-square test was conducted to test for a difference in female student success at the baccalaureate level as measured by student graduation status between Colby Community

College transfer students who completed an associate degree and Colby Community

College transfer students who did not complete an associate degree. The two categorical

variables included in the analysis were student community college exit status (completed

an associate degree, did not complete an associate degree) and student success

(graduated, currently enrolled, did not graduate). Observed frequencies were compared

to those expected by chance. A chi-square test was conducted to test for a difference in

male student success at the baccalaureate level as measured by student graduation status

between Colby Community College transfer students who completed an associate degree

and Colby Community College transfer students who did not complete an associate

degree. The two categorical variables included in the analysis were student community

college exit status (completed an associate degree, did not complete an associate degree)

and student success (graduated, currently enrolled, did not graduate). Additionally, the

observed frequencies were compared to those expected by chance. The results of the two

hypothesis tests were compared to address differences based on student sex.

RQ3. To what extent is the difference in student success at the baccalaureate level

between Colby Community College transfer students who completed an associate degree

and Colby Community College transfer students who did not complete an associate

degree affected by the race (non-minority, minority) of the student?

H5. The difference in student success at the baccalaureate level as measured by

student persistence between Colby Community College transfer students who completed

an associate degree and Colby Community College transfer students who did not

complete an associate degree is affected by race (non-minority, minority).

Prior to conducting the hypothesis tests for H5, the data were disaggregated by race (non-minority, minority). The level of significance for each test was set at .05. A chi-square test was conducted to test for a difference in non-minority student success at the baccalaureate level as measured by persistence between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree. The two categorical variables included in the analysis were student community college exit status (completed an associate degree, did not complete an associate degree) and student success (persisted, did not persist). Observed frequencies were compared to those expected by chance. A chi-square test was conducted to test for a difference in minority student success at the baccalaureate level as measured by persistence between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree. The two categorical variables included in the analysis were student community college exit status (completed an associate degree, did not complete an associate degree) and student success (persisted, did not persist). Additionally, the observed frequencies were compared to those expected by chance. The results of the two hypothesis tests were compared to address differences based on minority status.

H6. The difference in student success at the baccalaureate level as measured by student graduation status between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree is affected by race (non-minority, minority).

Prior to conducting the hypothesis tests for H6, the data were disaggregated by race (non-minority, minority). The level of significance for each test was set at .05. A chi-square test was conducted to test for a difference in non-minority student success at the baccalaureate level as measured by graduation status between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree. The two categorical variables included in the analysis were student community college exit status (completed an associate degree, did not complete an associate degree) and student success (graduated, currently enrolled, did not graduate). Observed frequencies were compared to those expected by chance. A chi-square test was conducted to test for a difference in minority student success as measured by graduation status at the baccalaureate level between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree. The two categorical variables included in the analysis were student community college exit status (completed an associate degree, did not complete an associate degree) and student success (graduated, currently enrolled, did not graduate). The observed frequencies were compared to those expected by chance. The results of the two hypothesis tests were compared to address differences based on minority status.

RQ4. To what extent is the difference in student success at the baccalaureate level between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree affected by the state of origin (Kansas/other state) of the student?

H7. The difference in student success at the baccalaureate level as measured by student persistence between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree is affected by the state of origin (Kansas/other state).

Prior to conducting the hypothesis tests for H7, the data were disaggregated by the state of origin (Kansas, other state). The level of significance for each test was set at .05. A chi-square test was conducted to test for a difference in Kansas student success at the baccalaureate level as measured by persistence between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree. The two categorical variables included in the analysis were student community college exit status (completed an associate degree, did not complete an associate degree) and student success (persisted, did not persist). The observed frequencies were compared to those expected by chance. A chi-square test was conducted to test for a difference in the success of students from other states at the baccalaureate level as measured by persistence between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree. The two categorical variables included in the analysis were student community college exit status (completed an associate degree, did not complete an associate degree) and student success (persisted, did not persist). The observed frequencies were compared to those expected by chance. The results of the two hypothesis tests were compared to address differences based on the state of origin.

H8. The difference in student success at the baccalaureate level as measured by student graduation status between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree is affected by the state of origin (Kansas/other state).

Prior to conducting the hypothesis tests for H8, the data were disaggregated by the state of origin (Kansas, other state). The level of significance for each test was set at .05. A chi-square test was conducted to test for a difference in Kansas student success at the baccalaureate level as measured by graduation status between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree. The two categorical variables included in the analysis were student community college exit status (completed an associate degree, did not complete an associate degree) and student success (graduated, currently enrolled, did not graduate). The observed frequencies were compared to those expected by chance. A chi-square test was conducted to test for a difference in the success of students from other states at the baccalaureate level as measured by graduation status between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree. The two categorical variables included in the analysis were student community college exit status (completed an associate degree, did not complete an associate degree) and student success (graduated, currently enrolled, did not graduate). The observed frequencies were compared to those expected by chance. The results of the two hypothesis tests were compared to address differences based on the state of origin.

Limitations

Lunenburg and Irby (2008) described limitations as "Factors that may have an effect on the interpretation of the findings or the generalizability of the results" (p. 133). Limitations of this study included the following:

1. Student success is due to a complex mixture of variables that are very difficult to determine and accurately deduce.

2. Colby Community College is among one of the smallest institutions in the state of Kansas. Analysis of a larger institution would have yielded a larger sample.

3. Credit hour completion at Colby Community College ranged from nine to 111 credit hours. Some students completed only nine credit hours, where other students completed more credit hours than the average associate degree (62 credit hours) at Colby Community College (Colby Community College, n.d.). This limitation made it difficult to deduce the true impact Colby Community College had on student success at the baccalaureate level.

4. Colby Community College does not have a large minority enrollment.

Summary

This study focused on the success of two samples of Colby Community College students who completed an associate degree and students who did not complete an associate degree prior to transferring to a public university in Kansas. Every student analyzed in the data was a first-time freshman at Colby Community College, enrolled during 2011-2013, and completed at least nine credit hours prior to transferring to a public university in Kansas. The success of these students was analyzed and quantified

by baccalaureate graduation and persistence status at one of the six public universities in

Kansas. Chapter 4 of this study presents the results of the analysis of the data and

hypothesis testing.

Chapter 4

Results

The purpose of this study was to investigate whether differences existed in student

success (persistence and graduation status) between Colby Community College transfer

students who completed an associate degree and Colby Community College transfer

students who did not complete an associate degree. An additional purpose of this study

was to examine to what degree student success was affected by student sex, race, and

state of origin among Colby Community College transfer students and associate degree

completing students in their pursuit of a bachelor degree. This chapter includes

descriptive statistics, a description of the hypothesis testing, additional analyses, and a

chapter summary.

Descriptive Statistics

This study included 236 participants, Colby County Community College students

enrolled during 2011-2013, who transferred to one of the six public universities in

Kansas. All subjects identified in this study were classified as a first-time freshman and

completed a range of nine to 111 credit hours at Colby Community College.

Demographic information for each participant was obtained from the National

Clearinghouse and included student sex, race, state of origin, degree status upon exiting

Colby Community College, and student success (persistence and graduation status) at the

baccalaureate level at one of the six public state universities.

Transfer students were separated into two categories: completed an associate

degree, did not complete an associate degree. Individuals who did not transfer to a public

state university were excluded from the study. Associate degree completing students

accounted for 54.2% (*n* = 128) of the total transfer students. Students who did not

complete an associate degree prior to transfer accounted for 45.8% (*n* = 108) of the

students. Table 5 summarizes participant associate degree completion.

Table 5

Associate Degree Completion Frequency Table (N = 236)

Associate Degree	*N*	%
Completed	128	54.2
Did Not Complete	108	45.8

Students were classified into two groups regarding student success (persisted, did

not persist). Persistence was defined as student enrollment and retention at the same

institution from one fall semester to the next fall semester (Cuseo, n.d.). Students who

were classified as having persisted were retained one fall semester to the next fall

semester. The students who persisted from one fall semester to the next fall semester

accounted for 79.2% (*n* = 187) of the total student sample. The students who did not

persist, 20.8% (*n* = 49), were not retained from first fall semester to second fall semester.

Within the study population, five students did not persist at the same public institution

from one fall to the next but did ultimately earn their bachelor degree within the 150%

timeframe at a public university in Kansas. These students were classified as did not

persist and graduated in the dataset. Table 6 summarizes student persistence at the

baccalaureate level.

Table 6

Student Persistence Frequency Table (N = 236)

Persistence	*N*	%
Persisted	187	79.2
Did Not Persist	49	20.8

All the groups were calculated within 150% of expected degree completion.

Students who graduated accounted for 28.4% (*n* = 67) of the students in the sample.

Currently enrolled students accounted for 36.4% (*n* = 86) of the total students in the

sample. Students classified as did not graduate accounted for 35.2% (*n* = 83) of the

sample. There were six students who did graduate but were outside of the 150%

timeframe; these students were classified as did not graduate. The students were

classified in this manner because graduation rates were calculated within a 150%

timeframe for completion (Kuh et al., 2005). Table 7 summarizes participant graduation

status at the baccalaureate level.

Table 7

Graduation Status Frequency Table (N = 236)

Graduation Status	*N*	%
Graduated	67	28.4
Currently Enrolled	86	36.4
Did Not Graduate	83	35.2

Of the 236 students in the data set, 63.1% (*n* = 149) of students were females and

36.9% (*n* = 87) were male. In the dataset, 93.2% (*n* = 220) of students were classified

non-minority students compared with 6.8% (*n* = 16) of students classified as a minority.

Additionally, in the dataset, 86.4% ($n = 204$) of students were from the state of Kansas while 13.6% ($n = 32$) of students were from other states. Table 8 summarizes the participants' demographic information.

Table 8

Demographic Frequency Table (*N = 236*)

Demographic	*N*	%
Student Sex		
Female	149	63.1
Male	87	36.9
Race		
Non-minority	220	93.2
Minority	16	6.8
State		
Kansas	204	86.4
Other	32	13.6

Hypothesis Testing

Eight hypotheses were examined in the research study based upon four research questions. Data were analyzed using IBM® SPSS® Statistics Base GradPack 24 for Windows. The research questions are listed below with the relevant hypotheses, description of the analyses, and results of the hypothesis tests.

RQ1. To what extent is there a difference in student success at the baccalaureate level between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree?

H1. There is a difference in student success at the baccalaureate level as measured by student persistence between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree.

A chi-square test of independence was conducted to test H1. The level of significance was set at .05. The two categorical variables included in the analysis were student community college exit status (completed an associate degree, did not complete an associate degree) and student success (persisted, did not persist). Observed frequencies were compared to those expected by chance. The results of the chi-square test of independence indicated a marginally significant finding in the difference between the observed and expected values, $\chi^2 = 2.173$, $df = 1$, $p = .140$. See Table 9 for the observed and expected frequencies. The observed frequency ($n = 106$) of students who exited with a degree and did persist was higher than the expected frequency ($n = 101.4$). The observed frequency ($n = 27$) of students who exited without a degree and did not persist was higher than the expected frequency ($n = 22.4$). There is a difference in student success at the baccalaureate level at a Kansas public university as measured by student persistence between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree. This finding supports H1.

Table 9

Persistence Cross Tabulation of Exit Status by Student Success (N = 236)

Exit Status		Student Success	
		Persisted	Did Not Persist
Degree	Observed	106.0	22.0
	Expected	101.4	26.6
No Degree	Observed	81.0	27.0
	Expected	85.6	22.4

H2. There is a difference in student success at the baccalaureate level as measured by student graduation status between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree.

A chi-square test of independence was conducted to test H2. The level of significance was set at .05. The two categorical variables included in the analysis were student community college exit status (completed an associate degree, did not complete an associate degree) and student success (graduated, currently enrolled, did not graduate). Observed frequencies were compared to those expected by chance. The results of the chi-square test of independence indicated a non-significant finding in the difference between the observed and expected values, $\chi^2 = 1.295$, $df = 2$, $p = .523$. See Table 10 for the observed and expected frequencies. There is no difference in student success at the baccalaureate level at a Kansas public university as measured by student graduation status between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree. This finding does not support H2.

Table 10

Graduation Status Cross Tabulation of Exit Status by Student Success (N = 236)

Exit Status		Student Success		
		Graduated	Enrolled	Did Not Graduate
Degree	Observed	39.0	48.0	41.0
	Expected	36.3	46.6	45.0
No Degree	Observed	28.0	38.0	42.0
	Expected	30.7	39.4	38.0

RQ2. To what extent is the difference in student success at the baccalaureate level between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree affected by the sex (female, male) of the student?

H3. The difference in student success at the baccalaureate level as measured by student persistence between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree is affected by the sex (female, male) of the student.

Prior to conducting the hypothesis tests for H3, the data were disaggregated by student sex (female, male). The level of significance for each test was set at .05. A chi-square test was conducted to test for a difference in female student success at the baccalaureate level as measured by student persistence between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree. The two categorical variables included in the analysis were student community college exit status (completed an associate degree, did not complete an associate degree) and student success (persisted,

did not persist). Observed frequencies were compared to those expected by chance. The

results of the chi-square test of independence for female students indicated a marginally

significant difference between the observed and expected values, $\chi^2 = 3.353$, $df = 1$,

$p = .067$. See Table 11 for the observed and expected frequencies. The observed

frequency ($n = 76$) of female students who exited with a degree and did persist was

higher than the expected frequency ($n = 71.8$). The observed frequency ($n = 15$) of

female students who exited without a degree and did not persist was higher than the

expected frequency ($n = 10.8$). There is a difference in student success for female

students at the baccalaureate level at a Kansas public university as measured by student

persistence between Colby Community College transfer students who completed an

associate degree and Colby Community College transfer students who did not complete

an associate degree.

Table 11

Female Persistence Cross Tabulation of Exit Status by Student Success (N = 149)

		Female Student Success	
Exit Status		Persisted	Did Not Persist
Degree	Observed	76.0	11.0
	Expected	71.8	15.2
No Degree	Observed	47.0	15.0
	Expected	51.2	10.8

A chi-square test was conducted to test for a difference in male student success at

the baccalaureate level as measured by student persistence between Colby Community

College transfer students who completed an associate degree and Colby Community

College transfer students who did not complete an associate degree. The level of

significance for each test was set at .05. The two categorical variables included in the

analysis were student community college exit status (completed an associate degree, did

not complete an associate degree) and student success (persisted, did not persist).

Observed frequencies were compared to those expected by chance. The results of the

chi-square test of independence for male students indicated a non-significant finding in

the difference between the observed and expected values, $\chi^2 = .006$, $df = 1$, $p = .938$. See

Table 12 for the observed and expected frequencies. The observed frequencies were not

different from the expected frequencies. There is no difference for male students in

student success at the baccalaureate level as measured by student persistence between

Colby Community College transfer students who completed an associate degree and

Colby Community College transfer students who did not complete an associate degree.

Table 12

Male Persistence Cross Tabulation of Exit Status by Student Success (N = 87)

Exit Status		Persisted	Did Not Persist
		Male Student Success	
Degree	Observed	30.0	11.0
	Expected	30.2	10.8
No Degree	Observed	34.0	12.0
	Expected	33.8	12.2

In summary, female students with an exit status of completed an associate degree

at Colby Community College tended to persist; female students with an exit status of did

not earn an associate degree at Colby Community College tended not to persist. There

was a non-significant finding for male students regarding differences in persistence at the

baccalaureate level as measured by student persistence between Colby Community

College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree. The results support H3. Student sex did affect the difference in persistence.

H4. The difference in student success at the baccalaureate level as measured by student graduation status between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree is affected by the sex (female, male) of the student.

Prior to conducting the hypothesis tests for H4, the data were disaggregated by student sex (female, male). The level of significance for each test was set at .05. A chi-square test was conducted to test for a difference in female student success at the baccalaureate level as measured by student graduation status between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree. The two categorical variables included in the analysis were student community college exit status (completed an associate degree, did not complete an associate degree) and student success (graduated, currently enrolled, did not graduate). Observed frequencies were compared to those expected by chance. The results of the chi-square test of independence for female students indicated a non-significant finding in the difference between the observed and expected values, $\chi^2 = .914$, $df = 2$, $p = .633$. See Table 13 for the observed and expected frequencies. There is no difference for female students in student success at the baccalaureate level as measured by graduation status between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree.

Table 13

Female Graduation Status Cross Tabulation of Exit Status by Student Success

(N = 149)

		Female Student Success		
Exit Status		Graduated	Enrolled	Did Not Graduate
Degree	Observed	27.0	35.0	25.0
	Expected	26.9	32.7	27.4
No Degree	Observed	19.0	21.0	22.0
	Expected	19.1	23.3	19.6

A chi-square test was conducted to test for a difference in male student success at the baccalaureate level as measured by student graduation status between Colby Community College associate degree completing students and Colby Community College transfer students who did not complete an associate degree. The level of significance for each test was set at .05. The two categorical variables included in the analysis were student community college exit status (completed an associate degree, did not complete an associate degree) and student success (graduated, currently enrolled, did not graduate). The observed frequencies were compared to those expected by chance. The results of the chi-square test of independence indicated a non-significant finding in the difference between the observed and expected values, $\chi^2 = 1.123$, $df = 2$, $p = .570$. See Table 14 for the observed and expected frequencies. There is no difference for male students in student success at the baccalaureate level as measured by graduation status between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree.

Table 14

Male Graduation Status Cross Tabulation of Exit Status by Student Success (N = 87)

		Male Student Success		
Exit Status		Graduated	Enrolled	Did Not Graduate
Degree	Observed	12.0	13.0	16.0
	Expected	9.9	14.1	17.0
No Degree	Observed	9.0	17.0	20.0
	Expected	11.1	15.9	19.0

In summary, there was a non-significant finding for female students regarding differences in graduation status at the baccalaureate level as measured by student persistence between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree. The same non-significant finding was discovered for male students, indicating there was no difference in student success for male students at the baccalaureate level as measured graduation status between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree. The results did not support H4. Student sex did not affect the difference in graduation status.

RQ3. To what extent is the difference in student success at the baccalaureate level between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree affected by the race (non-minority, minority) of the student?

H5. The difference in student success at the baccalaureate level as measured by student persistence between Colby Community College transfer students who completed

an associate degree and Colby Community College transfer students who did not

complete an associate degree is affected by race (non-minority, minority).

Prior to conducting the hypothesis tests for H5, the data were disaggregated by

race (non-minority, minority). The level of significance for each test was set at .05. A

chi-square test was conducted to test for a difference in non-minority student success at

the baccalaureate level as measured by persistence between Colby Community College

transfer students who completed an associate degree and Colby Community College

transfer students who did not complete an associate degree. The two categorical

variables included in the analysis were student community college exit status (completed

an associate degree, did not complete an associate degree) and student success (persisted,

did not persist). Observed frequencies were compared to those expected by chance. The

results of the chi-square test of independence for non-minority students indicated a

marginally significant finding in the difference between the observed and expected

values, $\chi^2 = 2.112$, $df = 1$, $p = .146$. See Table 15 for the observed and expected

frequencies. The observed frequency ($n = 100$) for non-minority students who exited

with a degree and persisted was higher than the expected frequency ($n = 95.7$). The

observed frequency ($n = 24$) for non-minority students who exited without a degree and

did not persist was higher than the expected frequency ($n = 19.7$). There is a difference

for non-minority students in student success at the baccalaureate level as measured by

student persistence between Colby Community College transfer students who completed

an associate degree and Colby Community College transfer students who did not

complete an associate degree.

Table 15

Non-minority Persistence Cross Tabulation of Exit Status by Student Success (N = 220)

		Non-Minority Student Success	
Exit Status		Persisted	Did Not Persist
Degree	Observed	100.0	19.0
	Expected	95.7	23.3
No Degree	Observed	77.0	24.0
	Expected	81.3	19.7

A chi-square test was conducted to test for a difference in minority student success at the baccalaureate level as measured by persistence between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree. The two categorical variables included in the analysis were student community college exit status (completed an associate degree, did not complete an associate degree) and student success (persisted, did not persist). Observed frequencies were compared to those expected by chance. The results of the chi-square test of independence for minority students indicated a non-significant finding in the difference between the observed and expected values, $\chi^2 = .152$, $df = 1$, $p = .696$. See Table 16 for the observed and expected frequencies. Within the dataset, three of the expected values are less than five total students. The limited number of participants makes it difficult to interpret the results. There is no difference for minority students in student success at the baccalaureate level as measured by student persistence between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree.

Table 16

Minority Persistence Cross Tabulation of Exit Status by Student Success (N = 16)

		Minority Student Success	
Exit Status		Persisted	Did Not Persist
Degree	Observed	6.0	3.0
	Expected	5.6	3.4
No Degree	Observed	4.0	3.0
	Expected	4.4	2.6

In summary, there was a marginally significant finding for non-minority students regarding differences in persistence at the baccalaureate level as measured by student persistence between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree. Although the assumption for expected frequencies was violated, a non-significant finding was discovered for minority students, indicating there appeared to be no difference in student success for minority students at the baccalaureate level as measured by student persistence between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree. The results appear to support H5. Race did affect the difference in persistence.

H6. The difference in student success at the baccalaureate level as measured by student graduation status between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree is affected by race (non-minority, minority).

Prior to conducting the hypothesis tests for H6, the data were disaggregated by race (non-minority, minority). The level of significance for each test was set at .05. A chi-square test was conducted to test for a difference in non-minority student success at the baccalaureate level as measured by graduation status between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree. The two categorical variables included in the analysis were student community college exit status (completed an associate degree, did not complete an associate degree) and student success (graduated, currently enrolled, did not graduate). Observed frequencies were compared to those expected by chance. The results of the chi-square test of independence for non-minority students indicated a non-significant finding in the difference between the observed and expected values, $\chi^2 = 1.037$, $df = 2$, $p = .595$. See Table 17 for the observed and expected frequencies. There is no difference for non-minority students in graduation status at the baccalaureate level between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree.

Table 17

Non-minority Graduation Status Cross Tabulation of Exit Status by Student Success

(N = 220)

| | | Non-Minority Student Success | | |
Exit Status		Graduated	Enrolled	Did Not Graduate
Degree	Observed	38.0	42.0	39.0
	Expected	34.6	43.3	41.1
No Degree	Observed	26.0	38.0	37.0
	Expected	29.4	36.7	34.9

A chi-square test was conducted to test for a difference in minority student success as measured by graduation status at the baccalaureate level between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree. The two categorical variables included in the analysis were student community college exit status (completed an associate degree, did not complete an associate degree) and student success (graduated, currently enrolled, did not graduate). The observed frequencies were compared to those expected by chance. The results of the chi-square test of independence indicated a statistically significant finding in the difference between the observed and expected values, $\chi^2 = 7.486$, $df = 2$, $p = .024$. See Table 18 for the observed and expected frequencies. The observed frequency ($n = 6$) for minority students who exited with a degree and were currently enrolled was higher than the expected frequency ($n = 3.4$). The observed frequency ($n = 5$) for minority students who exited without a degree and did not graduate was not higher than the expected frequency ($n = 3.1$). All the expected cells in the table have frequencies less than 5, which means an assumption for

the test has been violated and the results may not be reliable. However, there appears to be a difference for minority students in student success at the baccalaureate level as measured by graduation status (graduated, currently enrolled, did not graduate) between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree.

Table 18

Minority Graduation Status Cross Tabulation of Exit Status by Student Success

(N = 16)

Exit Status		Minority Student Success		
		Graduated	Enrolled	Did Not Graduate
Degree	Observed	1.0	6.0	2.0
	Expected	1.7	3.4	3.9
No Degree	Observed	2.0	0.0	5.0
	Expected	1.3	2.6	3.1

In summary, a non-significant finding was discovered for non-minority students, indicating there was no difference in student success for minority students at the baccalaureate level as measured by graduation status between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree. Minority students with an exit status of completed an associate degree at Colby Community College tended to have higher rates of individuals who were currently enrolled at the baccalaureate level, compared to minority students with an exit status of did not complete an associate degree at Colby Community College which tended not to have as many students classified as

currently enrolled at the baccalaureate level. The results of the hypothesis test appeared

to support H6. Race did affect the difference in graduation status.

      RQ4. To what extent is the difference in student success at the baccalaureate level

between Colby Community College transfer students who completed an associate degree

and Colby Community College transfer students who did not complete an associate

degree affected by the state of origin (Kansas/other state) of the student?

      H7. The difference in student success at the baccalaureate level as measured by

student persistence between Colby Community College transfer students who completed

an associate degree and Colby Community College transfer students who did not

complete an associate degree is affected by the state of origin (Kansas/other state).

      Prior to conducting the hypothesis tests for H7, the data were disaggregated by

state of origin (Kansas, other state). The level of significance for each test was set at .05.

A chi-square test was conducted to test for a difference in Kansas student success at the

baccalaureate level as measured by persistence between Colby Community College

transfer students who completed an associate degree and Colby Community College

transfer students who did not complete an associate degree. The two categorical

variables included in the analysis were student community college exit status (completed

an associate degree, did not complete an associate degree) and student success (persisted,

did not persist). The observed frequencies were compared to those expected by chance.

The results of the chi-square test of independence for Kansas students indicated a non-

significant finding in the difference between the observed and expected values,

$\chi^2 = .718$, $df = 1$, $p = .397$. See Table 19 for the observed and expected frequencies.

There is no difference for Kansas students in student success at the baccalaureate level as

measured by student persistence between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree.

Table 19

Kansas Persistence Cross Tabulation of Exit Status by Student Success (N = 204)

		Kansas Student Success	
Exit Status		Persisted	Did Not Persist
Degree	Observed	89.0	20.0
	Expected	86.6	22.4
No Degree	Observed	73.0	22.0
	Expected	75.4	19.6

A chi-square test was conducted to test for a difference in the success of students from other states at the baccalaureate level as measured by persistence between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree. The two categorical variables included in the analysis were student community college exit status (completed an associate degree, did not complete an associate degree) and student success (persisted, did not persist). The observed frequencies were compared to those expected by chance. The results of the chi-square test of independence for students from other states indicated a marginally significant finding in the difference between the observed and expected values, $\chi^2 = 3.525$, $df = 1$, $p = .060$. See Table 20 for the observed and expected frequencies. The observed frequency ($n = 17$) of students who exited with a degree and did persist was higher than the expected frequency ($n = 14.8$). The observed frequency ($n = 5$) of students who exited without a degree and did not persist was higher

than the expected frequency ($n = 2.8$). There appears to be a difference for students from other states in student success at the baccalaureate level at as measured by student persistence between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree.

Table 20

Other State Persistence Cross Tabulation of Exit Status by Student Success (N = 32)

		Student from Other States Success	
Exit Status		Persisted	Did Not Persist
Degree	Observed	17.0	2.0
	Expected	14.8	4.2
No Degree	Observed	8.0	5.0
	Expected	10.2	2.8

In summary, the hypothesis test for Kansas students revealed a non-significant finding indicating no difference in student success at the baccalaureate level as measured by student persistence between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree. The hypothesis test for students from other states revealed a marginally significant finding indicating there is a difference in student success at the baccalaureate level as measured by student persistence, between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree. The results of the hypothesis tests appear to support H7. The state of origin did affect the difference in persistence.

H8. The difference in student success at the baccalaureate level as measured by student graduation status between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree is affected by the state of origin (Kansas/other state).

Prior to conducting the hypothesis tests for H8, the data were disaggregated by state of origin (Kansas, other state). The level of significance for each test was set at .05. A chi-square test was conducted to test for a difference in Kansas student success at the baccalaureate level as measured by graduation status between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree. The two categorical variables included in the analysis were student community college exit status (completed an associate degree, did not complete an associate degree) and student success (graduated, currently enrolled, did not graduate). The observed frequencies were compared to those expected by chance. The results of the chi-square test of independence for Kansas students indicated a non-significant finding in the difference between the observed and expected values, $\chi^2 = .392$, $df = 2$, $p = .822$. See Table 21 for the observed and expected frequencies. There is no difference for Kansas students in student success at the baccalaureate level as measured by student graduation status between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree.

Table 21

Kansas Graduation Status Cross Tabulation of Exit Status by Student Success

(N = 204)

Exit Status		Kansas Student Success		
		Graduated	Enrolled	Did Not Graduate
Degree	Observed	33.0	40.0	36.0
	Expected	31.0	41.1	36.9
No Degree	Observed	25.0	37.0	33.0
	Expected	27.0	35.9	32.1

A chi-square test was conducted to test for a difference in the success of students

from other states at the baccalaureate level as measured by graduation status between

Colby Community College transfer students who completed an associate degree and

Colby Community College transfer students who did not complete an associate degree.

The two categorical variables included in the analysis were student community college

exit status (completed an associate degree, did not complete an associate degree) and

student success (graduated, currently enrolled, did not graduate). The observed

frequencies were compared to those expected by chance. The results of the chi-square

test of independence indicated a statistically significant finding in the difference between

the observed and expected values, $\chi^2 = 6.698$, $df = 2$, $p = .035$. See Table 22 for the

observed and expected frequencies. The observed frequency ($n = 6$) for students from

other states who exited with a degree and graduated was higher than the expected

frequency ($n = 5.3$). The observed frequency ($n = 8$) for students from other states who

exited with a degree and were currently enrolled was higher than the expected frequency

($n = 5.3$). The observed frequency ($n = 9$) for students from other states who exited

without a degree and did not graduate was higher than the expected frequency ($n = 5.7$).

There appears to be a difference for students from other states in student success at the

baccalaureate level as measured by student graduation status between Colby Community

College transfer students who completed an associate degree and Colby Community

College transfer students who did not complete an associate degree.

Table 22

Other State Graduation Status Cross Tabulation of Exit Status by Student Success

(N = 32)

		Student from Other State Success		
Exit Status		Graduated	Enrolled	Did Not Graduate
Degree	Observed	6.0	8.0	5.0
	Expected	5.3	5.3	8.3
No Degree	Observed	3.0	1.0	9.0
	Expected	3.7	3.7	5.7

In summary, there is no difference for Kansas students in student success at the

baccalaureate level as measured by student graduation status between Colby Community

College transfer students who completed an associate degree and Colby Community

College transfer students who did not complete an associate degree. Students from other

states with an exit status of completed an associate degree at Colby Community College

tended to be classified as graduated or currently enrolled, and students from other states

with an exit status of did not complete an associate degree at Colby Community College

prior to transfer tended not to be classified as graduated or currently enrolled at the same

rate. The results appear to support H8. State of origin did affect the difference in

graduation status.

Additional Analyses

After conducting the hypotheses testing it was determined that additional analyses

were needed to explore possible effects of credit hours on student success (persistence

and graduation status). The amount of earned credit hours at Colby Community College

prior to transfer varied dramatically with some student participants completing as few as

nine credit hours and other participants completing as many as 111 credit hours. The

participants were separated into three categories based upon credit hours earned at Colby

Community College: 9 to 30 credit hours (61 students), 31-62 credit hours earned

(78 students), and 63-plus credit hours (97 students). The range of earned credit hours

was too wide to utilize two categories and earned credit hour distribution for four

categories would have produced an uneven distribution of students. Because of the

earned credit hour range and student distribution, three categories were the most

appropriate classification to conduct additional analyses. Category 2 was set with a limit

of 62 credit hours to the average number of credit hours for an associate degree at Colby

Community College (Colby Community College, n.d.). Table 23 summarizes earned

credit hours.

Table 23

Earned Credit Hour Frequency Table (N = 236)

Earned Credit Hours	N	%
9-30	61	25.8
31-62	78	33.1
63-plus	97	41.1

A chi-square test was conducted to test for a difference in the success of students

with 9-30 credit hours at the baccalaureate level as measured by persistence between

Colby Community College transfer students who completed an associate degree and

Colby Community College transfer students who did not complete an associate degree.

The two categorical variables included in the analysis were student community college

exit status (completed an associate degree, did not complete an associate degree) and

student success (persisted, did not persist). The observed frequencies were compared to

those expected by chance. The level of significance for each test was set at .05. The

results of the chi-square test of independence for students with 9-30 credit hours

indicated a non-significant finding in the difference between the observed and expected

values, $\chi^2 = .002$, $df = 1$, $p = .965$. See Table 24 for the observed and expected

frequencies. There is no difference for students with 9-30 credit hours in student success

at the baccalaureate level as measured by student persistence between Colby Community

College transfer students who completed an associate degree and Colby Community

College transfer students who did not complete an associate degree.

Table 24

9-30 Credit Hours Cross Tabulation of Exit Status by Student Persistence (N = 61)

		9-30 Credit Hours Student Success	
Exit Status		Persisted	Did Not Persist
Degree	Observed	5.0	2.0
	Expected	5.0	2.0
No Degree	Observed	39.0	15.0
	Expected	39.0	15.0

A second chi square test was conducted to test for a difference in the success of

students with 9-30 credit hours at the baccalaureate level as measured by graduation

status between Colby Community College transfer students who completed an associate

degree and Colby Community College transfer students who did not complete an associate degree. The two categorical variables included in the analysis were student community college exit status (completed an associate degree, did not complete an associate degree) and student success (graduated, currently enrolled, did not graduate). The observed frequencies were compared to those expected by chance. The results of the chi-square test of independence for students with 9-30 credit hours indicated a non-significant finding in the difference between the observed and expected values, $\chi^2 = .453$, $df = 2$, $p = .797$. See Table 25 for the observed and expected frequencies. There is no difference for students with 9-30 credit hours in student success at the baccalaureate level as measured by student graduation status between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree.

Table 25

9-30 Credit Hours Cross Tabulation of Exit Status by Student Graduation Status

(N = 61)

Exit Status		9-30 Credit Hours Student Success		
		Graduated	Enrolled	Did Not Graduate
Degree	Observed	1.0	3.0	3.0
	Expected	1.7	2.6	2.6
No Degree	Observed	14.0	20.0	20.0
	Expected	13.3	20.4	20.4

In summary, there is no difference in student success at the baccalaureate level for participants transferring 9-30 credit hours at the baccalaureate level as measured by student persistence between Colby Community College transfer students who completed

an associate degree and Colby Community College transfer students who did not complete an associate degree. Additionally, there was no difference for these students in student success at the baccalaureate level as measured by student graduation status between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree. Violation of the expected frequency assumption and the limited number of students makes it difficult to draw accurate conclusions from the data.

A chi-square test was conducted to test for a difference in the success of students with 31-62 credit hours at the baccalaureate level as measured by persistence between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree. The two categorical variables included in the analysis were student community college exit status (completed an associate degree, did not complete an associate degree) and student success (persisted, did not persist). The observed frequencies were compared to those expected by chance. The level of significance for each test was set at .05. The results of the chi-square test of independence for students with 31-62 credit hours indicated a non-significant finding in the difference between the observed and expected values, $\chi^2 = .012$, $df = 1$, $p = .912$. See Table 26 for the observed and expected frequencies. There is no difference for students with 31-62 credit hours in student success at the baccalaureate level as measured by student persistence between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree.

Table 26

31-62 Credit Hours Two Cross Tabulation of Exit Status by Student Persistence

(N = 78)

		31-62 Credit Hours Student Success	
Exit Status		Persisted	Did Not Persist
Degree	Observed	24.0	8.0
	Expected	24.2	7.8
No Degree	Observed	35.0	11.0
	Expected	34.8	11.2

A second chi-square test was conducted to test for a difference in the success of

students with 31-62 credit hours at the baccalaureate level as measured by graduation

status between Colby Community College transfer students who completed an associate

degree and Colby Community College transfer students who did not complete an

associate degree. The two categorical variables included in the analysis were student

community college exit status (completed an associate degree, did not complete an

associate degree) and student success (graduated, currently enrolled, did not graduate).

The observed frequencies were compared to those expected by chance. The results of the

chi-square test of independence for students with 31-62 credit hours indicated a non-

significant finding in the difference between the observed and expected values, $\chi^2 = .663$,

$df = 2$, $p = .718$. See Table 27 for the observed and expected frequencies. There is no

difference for students with 31-62 credit hours in student success at the baccalaureate

level as measured by graduation status between Colby Community College transfer

students who completed an associate degree and Colby Community College transfer

students who did not complete an associate degree.

Table 27

31-62 Credit Hours Two Cross Tabulation of Exit Status by Student Graduation Status

(N = 78)

		31-62 Credit Hours Student Success		
Exit Status		Graduated	Enrolled	Did Not Graduate
Degree	Observed	10.0	11.0	11.0
	Expected	9.0	10.3	12.7
No Degree	Observed	12.0	14.0	20.0
	Expected	13.0	14.7	18.3

In summary, there is no difference for students with 31-62 credit hours in student success at the baccalaureate level as measured by student persistence between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree. Additionally, there is no difference for students with 31-62 credit hours in student success at the baccalaureate level as measured by student graduation status between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree. The limited number of students makes it difficult to draw accurate conclusions from the data.

A chi-square test was conducted to test for a difference in the success of students with 63-plus credit hours at the baccalaureate level as measured by persistence between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree. The two categorical variables included in the analysis were student community college exit status (completed an associate degree, did not complete an associate degree) and

student success (persisted, did not persist). The observed frequencies were compared to those expected by chance. The level of significance for each test was set at .05. The results of the chi-square test of independence for students with 63-plus credit hours indicated a non-significant finding in the difference between the observed and expected values, $\chi^2 = .006$, $df = 1$, $p = .938$. See Table 28 for the observed and expected frequencies. There is no difference for students with 63-plus credit hours in student success at the baccalaureate level as measured by student persistence between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree.

Table 28

63-Plus Credit Hours Three Cross Tabulation of Exit Status by Student Persistence

(N = 97)

		63-Plus Credit Hours Student Success	
Exit Status		Persisted	Did Not Persist
Degree	Observed	77.0	12.0
	Expected	77.1	11.9
No Degree	Observed	7.0	1.0
	Expected	6.9	1.1

A second chi-square test was conducted to test for a difference in the success of students with 63-plus credit hours at the baccalaureate level as measured by graduation status between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree. The two categorical variables included in the analysis were student community college exit status (completed an associate degree, did not complete an

associate degree) and student success (graduated, currently enrolled, did not graduate).

The observed frequencies were compared to those expected by chance. The results of the

chi-square test of independence for students with 63-plus credit hours indicated a non-

significant finding in the difference between the observed and expected values, $\chi^2 = .421$,

$df = 2$, $p = .810$. See Table 29 for the observed and expected frequencies. There is no

difference for students with 63-plus credit hours in student success at the baccalaureate

level as measured by student graduation status between Colby Community College

transfer students who completed an associate degree and Colby Community College

transfer students who did not complete an associate degree.

Table 29

63-Plus Credit Hours Cross Tabulation of Exit Status by Student Graduation Status

(N = 97)

		63-Plus Credit Hours Student Success		
Exit Status		Graduated	Enrolled	Did Not Graduate
Degree	Observed	28.0	34.0	27.0
	Expected	27.5	34.9	26.6
No Degree	Observed	2.0	4.0	2.0
	Expected	2.5	3.1	2.4

In summary, there is no difference for students with 63-plus credit hours in

student success at the baccalaureate level as measured by student persistence between

Colby Community College transfer students who completed an associate degree and

Colby Community College transfer students who did not complete an associate degree.

Additionally, there is no difference for students with 63-plus credit hours in student

success at the baccalaureate level as measured by student graduation status between

Colby Community College transfer students who completed an associate degree and

Colby Community College transfer students who did not complete an associate degree.

Violation of the expected frequency assumption and the limited number of students

makes it difficult to draw accurate conclusions from the data.

Additional testing for RQ2 was conducted, but of the 12 tests conducted, 11 had

violations of the expected frequency assumption and every test produced non-significant

results. Table 30 provides the results of RQ2 testing.

Table 30

RQ2 Earned Credit Hours Results

RQ	Hypothesis	Demographic	Credit Hours	X^2	df	p
2	3	Female	9-30	0.059	1	.809
2	4	Female	9-30	0.293	2	.864
2	3	Male	9-30	0.273	1	.602
2	4	Male	9-30	0.463	2	.793
2	3	Female	31-62	0.523	1	.470
2	4	Female	31-62	0.328	2	.849
2	3	Male	31-62	0.862	1	.353
2	4	Male	31-62	0.934	2	.627
2	3	Female	63-plus	0.071	1	.790
2	4	Female	63-plus	0.818	2	.664
2	3	Male	63-plus	0.248	1	.619
2	4	Male	63-plus	1.418	2	.492

As is shown in the table below, disaggregating the sample by the earned credit hours, and then further disaggregating each category by the demographics produces very small sample sizes in all three earned credit hour categories (9-30, 31-62, and 63-plus) for minority students and students from other states. Testing for RQ3-RQ4 would have yielded very small sub-sets of students and would have made accurate conclusions difficult to determine. Due to these factors, additional analyses were not necessary for RQ3-RQ4. Table 31 provides an overview of student demographics.

Table 31

Demographic Frequency Table, n (%)

	Credit Hours		
Demographic	9-30 ($n = 61$)	31-62 ($n = 78$)	63-plus ($n = 97$)
Student Sex			
Female	37 (60.7)	41 (52.6)	71 (73.2)
Male	24 (39.3)	37 (47.4)	26 (26.8)
Race			
Non-minority	56 (91.8)	73 (93.6)	91 (93.8)
Minority	5 (8.2)	5 (6.4)	6 (6.2)
State			
Kansas	48 (78.7)	65 (83.3)	83 (85.6)
Other	13 (21.3)	13 (16.7)	14 (14.4)

Summary

Chapter 4 included the results of the tests of the eight hypotheses associated with the four research questions for the study as well as additional analyses that focused on earned credit hours. Completing an associate degree prior to transfer produced a marginally significant difference in persistence at the baccalaureate level. However,

completing an associate degree prior to transfer produced a non-significant difference in graduation status at the baccalaureate level. For female students, completing an associate degree revealed a marginally significant difference in persistence but a non-significant difference in graduation status at the baccalaureate level. There was a non-significant finding for male students who completed an associate degree prior to transfer which indicated no difference in baccalaureate persistence and graduation status. For non-minority students, completing an associate degree prior to transfer revealed a marginally significant difference in persistence at the baccalaureate level. No difference was found for minority students who completed an associate degree prior to transfer in persistence at the baccalaureate level. There was a non-significant finding for non-minority students who completed an associate degree prior to transfer which indicated no difference in baccalaureate graduation status. For minority students, completing an associate degree prior to transfer appeared to influence the difference in graduation status at the baccalaureate level. Kansas students who completed an associate degree revealed no difference in persistence at the baccalaureate level. For students from other states who completed an associate degree prior to transfer appeared to influence the difference in persistence at the baccalaureate level. Kansas students who completed an associate degree prior to transfer revealed no significant difference in graduation status at the baccalaureate level. For students from other states who completed an associate degree prior to transfer there appeared to influence the difference in graduation status at the baccalaureate level.

An examination of earned credit hours produced non-significant findings. This indicated no difference for earned student credit hours in student success at the

baccalaureate level as measured by student persistence between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree. Additionally, there is no difference for any of the earned student credit hours in student success at the baccalaureate level as measured by student graduation status between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree.

Chapter 5 provides a study summary, which includes an overview of the problem, the purpose statement and research questions, a review of the methodology and major findings. Additionally, findings related to literature are presented. Lastly, conclusions are discussed, which provides implications for action and recommendations for future research as well as concluding remarks.

Chapter 5

Interpretation and Recommendations

Community colleges provide opportunities for underserved and underrepresented students to obtain an education (AACC, n.d.-b). According to the Community College Research Center (2015) the majority of community college students intend to enroll at a university. Students enrolled at community colleges are often considered less academically prepared than their university student counterparts (Beach, 2011). Student persistence and degree completion have become primary goals for all colleges (Kuh et al., 2005). This chapter will review the study and identify major findings and implications for action. It will also include recommendations for future research.

Study Summary

There is little research exploring the difference in student success (persistence and graduation status) at the baccalaureate level between community college transfer students who did not complete their associate degree and associate degree completing students. The current study indicated a relationship between student success (persistence and graduation status) at the baccalaureate level and a student earning an associate degree prior to transferring. In addition, this current study identified a relationship between student success (persistence) and student sex (female). The current study also indicated a relationship between student success (persistence) and race (non-minority), as well as student success (graduation status) and race (minority). Lastly, the current study indicated a relationship between student success (persistence and graduation status) and state of origin (other).

Overview of the problem. Student success is often defined by institutional persistence and graduation rates (Kuh et al., 2005). Community college student transfer data do not identify students as associate degree completers and non-associate degree completing students. The researcher identified studies from different states (Hawaii, Mississippi, and Ohio) that explored community college student success at the baccalaureate level (King, 2003; Taylor, 2015). However, no studies could be identified that focused specifically on central Midwest community college student success. Additionally, at the time of this study, the researcher had not identified any research that focused on student success (persistence and graduation status) between community college transfer and associate degree completing students who transferred to one of the six public universities in the state of Kansas.

Purpose statement and research questions. The purpose of this study was to investigate whether any differences existed in student success (persistence and graduation status) between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree. All data analyzed in this study included only first-time freshman at Colby Community College, enrolled during 2011-2013, and who had completed at least nine credit hours prior to transferring to a public university in Kansas. An additional purpose of this study was to examine to what degree student success (persistence and graduation status) was affected by student sex, race, and state of origin among Colby Community College transfer students and associate degree completing students in their pursuit of a bachelor degree. This study included 236 participants, Colby County Community College students enrolled during 2011-2013, who transferred to one of the

six public universities in Kansas. Data on student sex, race, state of origin, degree status

upon exiting Colby Community College, and student success (persistence and graduation

status) at the baccalaureate level was obtained from the National Clearinghouse.

Four research questions were identified to help guide this study. One research

question focused on the difference in student success (persistence and graduation status)

among Colby Community College transfer students who completed an associate degree

and Colby Community College transfer students who did not complete an associate

degree. The second research question focused on the influence of student sex (female,

male) on student success at the baccalaureate level. A third research question explored

the influence of race (non-minority, minority) on student success. The final research

question examined the influence of state of origin (Kansas, other) on student success at

the baccalaureate level.

Review of the methodology. A quantitative approach using archival data was the

selected research design. The dependent variables for this study were student success as

measured by persistence (persisted, did not persist) and graduation status (graduated,

currently enrolled, did not graduate) at the baccalaureate level. The independent

variables were transfer status (degree, no degree), student sex (female, male), race (non-

minority, minority) and state of origin (Kansas, other). Multiple chi-square tests of

independence were utilized to determine if there was a statistical difference in student

success when comparing the dependent and independent variables. Additional analyses

were conducted to determine if earned credit hours (9-30, 31-62, and 63-plus) influenced

student success.

Major findings. Chi-square tests of independence were utilized to analyze the relationship between earning an associate degree and baccalaureate success. Detailed results of the hypotheses testing are found in chapter 4. Results of the hypothesis testing that addressed each of the research questions is provided. Table 32 provides a summary of the hypothesis test results.

Table 32

Hypothesis Test Results

RQ	Hypothesis	Demographic	X^2	df	p
1	1		2.173	1	.140
1	2		1.295	2	.523
2	3	Female	3.353	1	.067
2	3	Male	0.006	1	.938
2	4	Female	0.914	2	.633
2	4	Male	1.123	2	.570
3	5	Non-minority	2.112	1	.146
3	5	Minority	0.152	1	.696
3	6	Non-minority	1.037	2	.595
3	6	Minority	7.486	2	.024
4	7	Kansas	0.718	1	.397
4	7	Other state	3.525	1	.060
4	8	Kansas	0.392	2	.822
4	8	Other state	6.698	2	.035

The results of the study indicated that there appears to be a relationship between a student earning an associate degree and persisting at the baccalaureate level compared to students who transferred prior to obtaining an associate degree. While marginally significant, the result of this study appears to illustrate that female students who earned an associate degree prior to transfer were more likely to persist at the baccalaureate level compared to female students who did not earn an associate degree prior to transfer. However, female students who earned an associate degree prior to transfer were not more or less likely to graduate at the baccalaureate level compared to students who did not earn an associate degree. Male students who earned an associate degree were not more or less likely to persist and graduate at the baccalaureate level compared to students who did not earn an associate degree.

For non-minority students, there appeared to be a marginally significant difference in persistence at the baccalaureate level for associate degree completing students, but not for minority students. Non-minority students who earned an associate degree prior to transfer were no more or less likely to graduate at baccalaureate level compared to students who did not earn an associate degree. Data appeared to indicate a significant finding in the difference in graduation status at the baccalaureate level for minority students who earned an associate degree prior to transfer compared to minority students who did not earn an associate degree prior to transfer.

For Kansas students, there was no difference in persistence at the baccalaureate level between students who earned an associate degree and students who did not earn an associate degree prior to transfer. However, data appeared to indicate a marginally significant finding in the difference in persistence at the baccalaureate level for students

from other states who earned an associate degree prior to transfer. Kansas students who

earned an associate degree prior to transfer did not reveal a difference in graduation status

at the baccalaureate level. Data appeared to indicate a significant finding in the

difference in graduation status at the baccalaureate level for students from other states

who earned an associate degree prior to transfer.

Additional analyses were conducted to determine if earned credit hours influenced

student success. Student participants were separated based upon credits earned at Colby

Community College: 9-30 credit hours, 31-62 credit hours, and 63-plus credit hours.

Data analysis indicated non-significant findings. There was no evidence that earned

credit hours influenced the relationship between exit status and persistence or graduation

status at the baccalaureate level.

Table 33

RQ1 Earned Credit Hour Test Results

RQ	Credit Hours	Student Success	X^2	*df*	*p*
1	9-30	Persistence	0.002	1	.965
1	9-30	Graduation Status	0.453	2	.797
1	31-62	Persistence	0.012	1	.912
1	31-62	Graduation Status	0.663	2	.718
1	63-plus	Persistence	0.006	1	.938
1	63-plus	Graduation Status	0.421	2	.810

Findings Related to the Literature

Literature regarding the academic success of community college transfer students was somewhat limited. Several studies (Crosta & Kopko, 2014; King, 2003; Taylor, 2015) identified the positive relationship between earning an associate degree prior to transfer and persisting toward the completion of a baccalaureate degree. Fain (2012) reported that students were significantly more likely to obtain their baccalaureate degree if they obtained an associate degree prior to transfer when compared to students who had not earned an associate prior to transfer. The current study indicated a marginally significant difference in student success at the baccalaureate level at a Kansas public university as measured by student persistence between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree, but not for graduation status.

List and Nadasen (2014) stated that student sex had a direct influence on persistence, reporting that females were statistically more likely to persist than their male counterparts. This study indicates that student sex did affect persistence. Although it was only marginally significant, female students with an associate degree were more likely to persist compared to female students without an associate degree; male students with an associate degree were not more or less likely to persist compared to male students who did not complete an associate degree prior to transfer. For both female and male students, completing an associate degree prior to transfer did not influence graduation status.

Oseguera and Rhee (2009) reported that student race had a direct influence on student success. Students who were identified as a minority status (African-American,

Latino, and Native American) did not persist and graduate at the same commensurate rate as Caucasian students (Oseguera & Rhee, 2009). Reason (2003) also reported that Caucasian (non-minority) students persisted at a higher rate compared to minority students (African-American, Latino, and Native American). Reason (2009) concluded that Caucasian students were more likely to persist and graduate compared to minority students, but attributed this more to socioeconomic status and overall academic preparedness. Reason (2009) did not identify that student sex influenced success as much as other variables such as socioeconomic status and campus culture. The current study did demonstrate race as influencing persistence for non-minority students but not for minority students. Additionally, race did appear to influence graduation status for minority students but not non-minority students.

Research has not explored the relationship between the state of origin and student success. This study did not identify that state of origin for Kansas students had any influence on persistence or graduation status. However, the study did identify that students from other states had an influence on persistence and graduation status.

There were a limited number of participants who were categorized under the independent variables of race (minority) and state of origin (other state) in the current study. The results of the current study appeared to reveal minority students and students from other states who earned an associate degree were more likely to also earn a bachelor degree as measured by student graduation between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree. There was no research that identified this finding.

There was no identified research that explored the relationship between earned credit hours and student success as defined in this study. This study did not identify that earned credit hours had any influence on persistence or graduation status.

Conclusions

Findings from the current study appeared to illustrate the correlation among the selected sub-groups of students earning an associate degree and experiencing student success at the baccalaureate level, even if only marginally significant. Previous research had identified a correlation between students earning their associate degree and experiencing greater levels of student success at the baccalaureate level compared to students who did not earn an associate degree prior to transfer (Crosta & Kopko, 2014; Taylor, 2015). Although not statistically significant, the observed results of this study indicated that for male, non-minority, and Kansas students who earned an associate degree prior to transfer exceeded the expected number of earned baccalaureate degrees. Only female and minority students who earned an associate degree prior to transfer did not exceed the expected number of baccalaureate degrees earned.

Implications for action. The current study appears to support previous research that earning an associate degree prior to transfer does influence student success (persistence and graduation status) at the baccalaureate level. However, not all the findings were statistically significant. Studies exploring other states identified the same positive relationship between students earning their associate degree and persisting and graduating with a baccalaureate degree (Crosta & Kopko, 2014; Taylor, 2015). This study along with the other aforementioned studies should be made available to community college students to help them make a more informed decision when trying to

decide if they should earn an associate degree from a community college prior to transferring to a 4-year university. Because of the difficulty in disseminating the results of the studies to community college students across the nation, these studies should also be made known to primary advisors at community colleges. To accomplish this, community college administrators could require advisors to review the results of this study as part of the advisor training. Primary advisors at community colleges should be encouraged to stress to students the importance of obtaining an associate degree prior to transferring, based on the empirical evidence identified in this research.

Comprehensive advising services are critical to student success within the 2-year sector (Castleman & Sullivan, 2016). Students who receive comprehensive advising are statistically more likely to experience greater levels of student success compared to students who do not receive comprehensive advising (Dynarski, 2015). Because of this, student advising services should be high priorities for educational administrators.

The study also reported that student sex had a marginally significant influence on student success (persistence) for females but not for males. Student race (non-minority) appeared to have a marginally significant influence on the difference in persistence at the at baccalaureate level between students who earned an associate degree prior to transfer; however, it did not influence graduation status for non-minority students, but it did for minority students. State of origin for students from other states appeared to have a marginally significant influence on the difference in persistence and a statistically significant difference in graduation status at the baccalaureate level between students who earned an associate degree and those who did not, the same difference was not found for Kansas students. Other studies identified that race did influence student success, with

minority students not persisting and graduating at the same commensurate rate (Oseguera & Rhee, 2009; Reason, 2003). Even though the results of this study did not illustrate race as a factor that impacted student success, educational administrators need to be aware of the unique challenges that minority students face and provide adequate support services to ensure students can be successful (Boggs, 2010; Murphy & Destin, 2016).

Recommendations for future research. The difference in student success at the baccalaureate level between Colby Community College transfer students who completed an associate degree and Colby Community College transfer students who did not complete an associate degree was examined in this study. Secondly, this study also analyzed the influence of student sex, race, and state of origin on student success at the baccalaureate level. The results of this study yielded the need for continued examination of factors related to student success at different institutions.

For this study, a quantitative approach using archival data was the selected research design. A qualitative approach could potentially reveal additional factors that motivate student success. These factors could include student motivation, innate student ability, and the students' feelings toward education. Future studies could examine these variables to see their impact on persistence and graduation at the baccalaureate level.

The current study provides a baseline of student success for community college transfer students at the baccalaureate level. A replication of the study at other community colleges in the state of Kansas, especially institutions more ethnically diverse and larger than Colby Community College, could potentially produce different results (Oseguera & Rhee, 2009; Reason, 2003). Additionally, an expansion of the years when the students attended Colby Community College (2011-2013) to include more current data might also

potentially produce different or more expansive findings. The limitation of only

analyzing students who transferred to a public university in Kansas could be expanded to

include transfer to a private institution. For example, there are 18 private Kansas

institutions (Kansas Board of Regents, 2015). Examining both public and private

universities potentially might have yielded different results. The research could also be

expanded to analyzing students who transferred to a university in a neighboring state.

Additional research should focus on credit hour achievement and student success

prior to transfer. Analyzing credit hour achievement may illustrate if there is a difference

in student success based on the amount of credit hours earned at a community college

before transferring to a university. The classification of four groupings might produce

different results than the broader three categories analyzed in this study (1-15 credit

hours, 16-30 credit hours, 31-45 credit hours, 46-62 credit hours). Other future research

could separate students by earned GPA (1.0, 2.0, 3.0, 4.0) per semester at a community

college, to determine if there was a correlation between earned GPA at a community

college and student success (persistence and graduation status) at the baccalaureate level.

Future research could explore a multiple state area over the same period of time as

well as examine regions, for example the Midwest states (Kansas, Nebraska, Missouri,

and Oklahoma). This level of exploration might illustrate distinct patterns and findings.

Additionally, other variables could be analyzed to determine the potential effect they

might have on student success. These variables could include eligibility for financial aid,

Pell Grant recipient, and the age of the student (traditional or non-traditional). Research

has shown that student success is directly affected by socioeconomic status and

classification as traditional or non-traditional (Boggs, 2010; Kolodner, 2016; Pelletier, 2010; Reason, 2003; Reason, 2009).

Concluding remarks. Community colleges serve the most diverse student population in higher education. Multiple student characteristics can present unique and different challenges for educators (Boggs, 2010). Limited research has been conducted on the student success (persistence and graduation status) of community college students at the baccalaureate level. While not statistically significant, the results of this study appeared to provide evidence that transfer students who completed an associate degree are more likely to persist and graduate at the baccalaureate level, compared to transfer students who did not complete an associate degree. This study appeared to provide supporting evidence that community colleges should continue to encourage students to obtain their associate degree prior to transferring. The results of the current study should encourage other community colleges to analyze and conduct studies on the impact completion of an associate degree has on persistence and graduation status at the baccalaureate level. Continued research on student success among transfer students will benefit students, higher education in Kansas, and higher education across the nation.

References

American Association of Community Colleges. (n.d.-a). *Community colleges past to present.* Retrieved from American Association of Community Colleges website: http://www.aacc.nche.edu/AboutCC/history/Pages/pasttopresent.aspx

American Association of Community Colleges. (n.d.-b). *The top ten benefits of attending a U.S. community college.* Retrieved from American Association of Community Colleges website: http://www.aacc.nche.edu/Resources/ aaccprograms/international/Documents/studentguide/sg8_top10benefits.pdf

American Association of Community Colleges. (2014). *2014 fact sheet.* Retrieved from American Association of Community Colleges website: http://www.aacc.nche .edu/AboutCC/Documents/Facts14_Data_R3.pdf

American Association of Community Colleges. (2015, January). *2015 fact sheet.* Retrieved from https://www.yc.edu/v5content/strategicplanning/docs/AACC FactSheet2015.pdf

Beach, J. (2011). *Gateway to opportunity? A history of the community college in the United States*. Sterling, VA: Stylus Publications.

Boggs, G. (2010, August). *Democracy's colleges: The evolution of the community college in America*. Retrieved from American Association of Community Colleges website: http://www.aacc.nche.edu/AboutCC/whsummit/Documents/ boggs_whsummitbrief.pdf

California Community Colleges Student Success Task Force. (n.d.). *Advancing student success in California community colleges*. Retrieved from http://www.californiacommunitycolleges.cccco.edu/Portals/0/StudentSuccessTask Force/SSTF_FinalReport_Web_010312.pdf

Castleman, B., & Sullivan, Z. (2016). *How to pay for success in higher education.* Retrieved from https://www.brookings.edu/blog/brown-center-chalkboard/2016/04/25/how-to-pay-for-success-in-higher-education/

Center for Community College Student Engagement. (2016). *Expectations meet reality: The underprepared student and community colleges.* Retrieved from Center for Community College Student Engagement website: https://www.ccsse.org/docs/ Underprepared_Student.pdf

Center for Innovation in Research and Teaching. (n.d.). *Sampling methods*. Retrieved from Center for Innovation in Research and Teaching website: https://cirt.gcu.edu/research/developmentresources/research_ready/quantresearch/ sample_meth

Center on Budget and Policy Priorities. (2016, August 16.). *State-by-state fact sheets: Higher education cuts jeopardize students' and states' economic future.* Retrieved from http://www.cbpp.org/sites/default/files/atoms/files/sfp_highered_ks.pdf

Chen, G. (2017, February). *How well do community college students perform after transferring?* Retrieved from http://www.communitycollegereview.com/ blog/how-well-do-community-college-students-perform-after-transferring

Chronicle of Higher Education. (n.d.). *Graduation rates by state.* Retrieved from http://collegecompletion.chronicle.com/

Colby Community College. (n.d.). *Programs of study.* Retrieved from Colby

Community College website: http://www.colbycc.edu/academics/index

Colby Community College. (2012). *You're an essential piece.* Retrieved from Colby

Community College website: http://www.colbycc.edu/Assets/Documents/Faculty/

HLC/Final%20HLC%20Self-Study%20Plan.pdf

Colby Community College. (2016). *Assurance filing 2016.* Retrieved from Colby

Community College website: http://www.colbycc.edu/Assets/Documents/

Faculty/HLC/Assurance_Filing.pdf

College Atlas. (2017). *University vs community college: Comparisons and

differences.* Retrieved from http://www.collegeatlas.org/community-college-

benefits.html

College Board. (n.d.). *Trends in student aid 2013.* Retrieved from

http://trends.collegeboard.org/sites/default/files/student-aid-2013-full-report.pdf

CollegeTransfer.Net. (n.d.). *What is a college articulation agreement?* Retrieved

from http://www.collegetransfer.net/AskCT/WhatisanArticulationAgreement

Columbia State Community College. (n.d.). *Are you a…first-time college freshman?*

Retrieved from Columbia State Community College website:

http://www.columbiastate.edu/admissions/type-of-student/first-time-college-

freshman

Community College Research Center. (2015, January). *What we know about transfer.*

Retrieved from Community College Research Center website:

https://ccrc.tc.columbia.edu/media/k2/attachments/what-we-know-about-

transfer.pdf

Cooper, M. (2010). *Student support services at community colleges: A strategy for increasing student persistence and attainment*. Retrieved from https://www2.ed.gov/PDFDocs/college-completion/04-student-support-services-at-community-colleges.pdf

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). Los Angeles, CA: Sage Publications.

Crosta, P., & Kopko, E. (2014). Should community college students earn an associate degree before transferring to a four-year institution? *Research in Higher Education, 57*(2), 190-222. doi:10.1007/s11162-015-9383-x

Cuseo, J. (n.d.). *Student success: Definition, outcomes, principles and practices.* Retrieved from https://www2.indstate.edu/studentsuccess/pdf/Defining%20Student%20Success.pdf

Darby-Hudgens, F. (2012). *Maintaining a mission: The history of community colleges in the United States*. Retrieved from http://commons.trincoll.edu/edreform/2012/04/maintaining-a-mission-the-history-of-community-colleges-in-the-united-states/

Department of Homeland Security. (2013, January). *What is a public university? What is a private university?* Retrieved from https://studyinthestates.dhs.gov/2013/01/what-is-a-public-university-what-is-a-private-university

Dynarski, S. (2015, March 11). How to improve graduation rates at community colleges. *The New York Times.* Retrieved from http://www.nytimes.com/2015/03/12/upshot/how-to-improve-graduation-rates-at-community-colleges.html?_r=0

Fain, P. (2012). *Gradute, transfer, graduate.* Retrieved from Inside Higher Ed

    website: https://www.insidehighered.com/news/2012/11/08/high-graduation-

    rates-community-college-transfers

Fain, P. (2014). *Open access and inequity.* Retrieved from Inside Higher Ed

    website: https://www.insidehighered.com/news/2014/06/17/new-book-says-

    community-colleges-should-tighten-their-admissions-policies

Farkas, K. (2016*). Most people want a college degree, but reaching that goal remains a*

    challenge, report says. Retrieved from http://www.cleveland.com/metro/index.ssf

    /2016/09/most_people_want_a_college_degree_but_reaching_that_goal_remains_

    a_challenge_report_says.html

Florida State College at Jacksonville. (2014, August, 4). *Student Analytics and Research,*

    SAReport 1(3), 1-8. Retrieved from https://www.fscj.edu/docs/default-

    source/default-document-library/sareport-8-4-14

Guess, A. (2008). *Defining college success.* Retrieved from Inside Higher Ed website:

    https://www.insidehighered.com/news/2008/05/20/board

Higher Learning Commission. (n.d.). *How institutions are accredited*.

    Retrieved from https://www.hlcommission.org/HLC-Institutions/how-institutions-

    are-accredited.html

Joliet Community College. (n.d.). *History.* Retrieved from Joliet Community College

    website: http://www.jjc.edu/college-info/Pages/history.aspx

Jusziewicz, J. (2014, April). *Community college students and federal student financial*

    aid: A primer. Retrieved from https://pdfs.semanticscholar.org

    /5ab4/4c8a44657c8172589b5a2a10e95d83a55f5b.pdf

Kansas Board of Regents. (n.d.). *Public institutions.* Retrieved from Kansas Board of

    Regents website: http://www.kansasregents.org/universities_colleges/

    public_institutions#38.4601793/-102.8176233/6/cats/142;141

Kansas Board of Regents. (2015). *Foresight 2020: Graduation rates by institution and*

    sector [data file]. Retrieved from https://www.kansasregents.org/resources/

    PDF/Foresight2020/Foresight2020_January2015_Appendix_Graduation.pdf

Karp, M. (2013, May). Entering a program: Helping students make academic and career

    decisions. *Community College Research Center.* Retrieved from

    https://ccrc.tc.columbia.edu/media/k2/attachments/entering-a-program.pdf

Karp, M. J. M., & Cho, S. W. (2012, February). Student success courses and educational

    outcomes at Virginia community colleges. *Community College Research Center*.

    New York, NY. Retrieved from https://academiccommons.columbia.edu/

    catalog/ac%3A170220

King, J. (2012, May 30). Five reasons community colleges make sense right now. *U.S.*

    News and World Report. Retrieved from https://money.usnews.com/money/blogs/

    my-money/2012/05/30/5-reasons-community-colleges-make-sense-right-now

King, S. (2003). *Comparison of community college transfer and university native*

    students' academic performance and participation in teaching (Doctoral

    dissertation). Retrieved from http://citeseerx.ist.psu.edu/viewdoc/download;

    jsessionid=13BB253839E3711CD1A060EBEBFF6E67?doi=10.1.1.568.1527&re

    p=rep1&type=pdf

Koebler, J. (2012, April 21). Community college attendance up, but graduation rates remain low. *U.S. News.* Retrieved from http://www.usnews.com/education/best-colleges/articles/2012/04/21/r

Kolesnikova, N. (2009). The changing role of community colleges. *Federal Reserve Bank of St. Louis.* Retrieved from https://www.stlouisfed.org/publications/bridges /fall-2009/the-changing-role-of-community-colleges

Kolodner, M. (2015, May 5). Why are graduation rates at community colleges so low? *The Hechinger Report.* Retrieved from http://hechingerreport.org/new-book-addresses-low-community-college-graduation-rates/

Kolodner, M. (2016, January 19). Fewer than one in seven community college students transfer and get a bachelor's degree-but there is new hope. *The Hechinger Report.* Retrieved from http://hechingerreport.org/how-often-do-community-college-students-who-get-transfer-get-bachelors-degrees/

Kreighbaum, A. (2016, September 21). *Regional accreditors refocus on institutions with low grad rates*. Retrieved from Inside Higher Ed website: https://www.insidehighered.com/news/2016/09/21/regional-accreditors-refocus-institutions-low-grad-rates

Kuh, G., Kinzie, J., Schuh, J., & Whitt, E. (2005). *Student success in college: Creating conditions that matter.* San Francisco, CA: Jossey-Bass.

Kuh, G., Kinzie, J., Buckley, J., Bridges, B., & Hayek, J. (2006, July). *What matters to student success: A review of the literature.* Retrieved from https://nces.ed.gov /npec/pdf/kuh_team_report.pdf

Learn.org. (n.d.). *What type of degree programs are offered at community colleges?* Retrieved from https://learn.org/articles/What_Type_of_Degree_Programs _are_Offered_at_Community_Colleges.html

List, A., & Nadasen, D. (2014, November). *Community college transfer students' persistence at university*. Retrieved from http://www.umuc.edu/documents/ upload/community-college-transfer-students-persistence-at-university.pdf

Lloyd, P., & Eckhardt. R. (2010). Strategies for improving retention of community college students in the sciences. *Science Educator, 19*(1), 33-41. Retrieved from ERIC database. (EJ874152)

Lunenburg, F. C., & Irby, B. J. (2008). *Writing a successful thesis or dissertation: Tips and strategies for students in the social and behavioral sciences.* Thousand Oaks, CA: Corwin Press.

Ma, J., & Baum, S. (2016, April). *Trends in community colleges: Enrollment, prices, student debt, and completion*. Retrieved from College Board website: https://trends.collegeboard.org/sites/default/files/trends-in-community-colleges- research-brief.pdf

McPherson, M. & Schapiro, M. (2009). College success: What it means and how to make it happen. *Forum of the Future of Higher Education,* 47-49. Retrieved from https://net.educause.edu/ir/library/pdf/ff0911s.pdf

Mosier, R. (2010). *Against all odds: The founding of Colby Community College.* Colby, KS: LeRoy's Printing and Publishing.

Murphy, M. & Destin, M. (2016, May). *Promoting inclusion and identity safety to support college success*. Retrieved from https://tcf.org/content/report/ promoting-inclusion-identity-safety-support-college-success/

National Center for Education Statistics. (n.d.-a). *Definitions and data.* Retrieved from https://nces.ed.gov/pubs/web/97578e.asp

National Center for Education Statistics. (n.d.-b). *Graduation rate from first institution attended within 150 percent of normal time for first-time, full-time degree/certificate-seeking students at 2-year postsecondary institutions, by race/ethnicity, sex, and control of institution*. Retrieved from https://nces.ed.gov/ programs/digest/d14/tables/dt14_326.20.asp

National Center for Education Statistics. (n.d.-c). *Glossary.* Retrieved from https://nces.ed.gov/programs/coe/glossary.asp#associates

National Student Clearinghouse Research Center. (2016). *First-year persistence and retention rates for students who start college in two-year public institutions.* Retrieved from https://nscresearchcenter.org/snapshotreportpersistence retention22/

Nelson, V. (n.d.). What does college "open admission" mean? Retrieved from https://www.collegeparentcentral.com/2013/02/what-does-college-open -admission-mean/

Nobelius, A. (2004). *What is the difference between sex and gender?* Retrieved from http://www.med.monash.edu.au/gendermed/sexandgender.htm

Office of Career, Technical, and Adult Education. (n.d.). *Community college facts at a glance.* Retrieved from U.S. Department of Education Website: http://www2.ed.gov/about/offices/list/ovae/pi/cclo/ccfacts.html

Oseguera, L., & Rhee, S. B. (2009, April). The influence of institutional retention climates on student persistence to degree completion: A multilevel approach. *Research in Higher Education, 50*(6), 546-569. doi:10.1007/s11162-009-9134-y

Pannoni, A. (2015, February 5). Frequently asked questions: Community colleges. *U.S. News & World Report.* Retrieved from http://www.usnews.com/education/community-colleges/articles/2015/02/06/frequently-asked-questions-community-college

Pelletier, S. (2010). Success for adult students. *Public Purpose.* Retrieved from http://www.aascu.org/uploadedFiles/AASCU/Content/Root/MediaAndPublications/PublicPurposeMagazines/Issue/10fall_adultstudents.pdf

Radwin, D., & Horn, L. (2014). What is a transfer student? *The Completion Arch: Measuring Community College Student Success.* Retrieved from http://www.completionarch.org/uploads/What_is_a_Transfer_Student.pdf

Reason, R. (2003). Student variables that predict retention: Recent research and new developments. *NASPA Journal, 40*(4), 172-191. Retrieved from http://www.uccs.edu/Documents/retention/2003%20Student%20Variables%20that%20Predict%20Retention.pdf

Reason, R. (2009, December). An examination of persistence research through the lends of a comprehensive conceptual framework. *Journal of College Student Development, 50*(6), 659-682. Retrieved from https://pdfs.semanticscholar.org/ 96ea/3dcb9e3a59fa9210492d7199ba64686aa241.pdf

Richardson, B. (2016, September). *Leading the nation: The Kansas transfer story.* Retrieved from http://www.kansasregents.org/resources/PDF/Leading_ the_Nation_KAAN2016.pdf

Schaffhauser, D. (2016, February 24). Many community college students are not prepared for college-level work, report shows. *The Journal.* Retrieved from https://thejournal.com/articles/2016/02/24/many-community-college-students-are-not-prepared-for-college-level-work-report-shows.aspx

Shannon, H., & Smith, R. (2006). A case of the community college's open access mission. *New Direction for Community Colleges, 136,* 16-21. Retrieved from http://www.accbd.org/articles/index.php/attachments/single/200 jeopardize-students-and-states-economic

Smith, A. (2015, November 10). *Who's in first (generation)?* Retrieved from Inside Higher Ed website: https://www.insidehighered.com/news/2015/11/10/who-are-first-generation-students-and-how-do-they-fare

Strong, R., Silver, H., & Robinson, A. (1995, September). Strengthening student engagement: What do students want? *Educational Leadership, 53*(1), 8-12. Retrieved from http://www.ascd.org/publications/educational-leadership/sept95/vol53/num01/Strengthening-Student-Engagement@-What-Do-Students-Want.aspx

Success. (2017). In *English Oxford Living Dictionaries.* Retrieved from

https://en.oxforddictionaries.com/definition/us/success

Taylor, J. (2015). *Does the associate degree matter? Evidence from Hawaii and Ohio.*

Retrieved from http://occrl.illinois.edu/docs/librariesprovider4/cwid/cwid-data-

note-3.pdf

U.S. Census Bureau. (2017). *Race.* Retrieved from https://www.census.gov/topics/

population/race/about.html

U.S. Department of Education. (n.d.). *Low-income and minority students.* Retrieved from

 U.S. Department of Education website: https://www2.ed.gov/offices/OPE/

AgenProj/report/theme1a.html

UT News. (2016, February 23). *Many community college students are not prepared for

college-level work, report shows.* Retrieved from https://news.utexas.edu/2016

/02/23/community-college-students-arrive-unprepared-says-study

Walpole. M. (2003). Socioeconomic status and college: How ses affects college

experiences and outcomes. *The Review of Higher Education, 27*(1), 45-73.

Retrieved from ERIC database. (EJ677177)

Walters, E., & McKay, S. (2005). Strategic planning and retention within the

community college setting. *College Student Affairs Journal, 25*(1), 50-63.

Retrieved from ERIC database. (EJ957012)

Weber, R. (2009). *A comparative study of academic success and persistence between Kansas public community college transfer students and native students at the University of Kansas* (Doctoral dissertation). Retrieved from http://www.bakeru.edu/images/pdf/SOE/EdD_Theses/Weber_Randy.pdf mean/

Appendices

Appendix A: Baker University IRB Request

BAKER
UNIVERSITY

SCHOOL OF EDUCATION
GRADUATE DEPARTMENT

Date: _____
IRB PROTOCOL NUMBER _____
(IRB USE ONLY)

IRB REQUEST
Proposal for Research
Submitted to the Baker University Institutional Review Board

I. **Research Investigator(s)** (Students must list faculty sponsor first)

Department(s) **School of Education Graduate Department**

Name   Signature

1. Dr. Marie Miller   _____,   Major Advisor

2. Dr. Margaret Waterman   _____,   Research Analyst

3. Dr. Tes Mehring   University Committee Member

4.   External Committee Member

_____

Principal Investigator: Seth Macon Carter
Phone: 620.228.1800
Email: sethmcarter@stu.bakeru.edu
Mailing address: 360 E. Cherry St.
                  Colby, KS 67701

Faculty sponsor: Dr. Marie Miller
Phone: 620-757-6371
Email: Marie.Miller@bakeru.edu

Expected Category of Review: ___Exempt _X_ Expedited _ __Full

II: Protocol: (Type the title of your study)

Colby Community College Student Success at the Baccalaureate Level

Summary

In a sentence or two, please describe the background and purpose of the research.

The purpose of this study is to quantify the difference in student success (utilizing two measures of success: persistence and graduation status at the baccalaureate level at one of the six public universities in Kansas) between transfer students and associate degree completing students from Colby Community College during the years of 2011-2013. An additional purpose of this study was to examine to what extent student success is affected by sex, race, and state of origin among Colby Community College transfer students and associate degree completing students in their pursuit of a bachelor's degree.

Briefly describe each condition or manipulation to be included within the study.

There are no conditions or manipulations included in this study.

What measures or observations will be taken in the study? If any questionnaire or other instruments are used, provide a brief description and attach a copy.

There will be no questionnaires or instruments used in this study. The researcher will use secondary data obtained from the Director of Institutional Effectiveness and Research at Colby Community; this data will be the source of information used for this study.

Will the subjects encounter the risk of psychological, social, physical, or legal risk? If so, please describe the nature of the risk and any measures designed to mitigate that risk.

The subjects will not encounter the risk of psychological, social, physical, or legal risk.

Will any stress to subjects be involved? If so, please describe.

The subjects will not encounter any stress.

Will the subjects be deceived or misled in any way? If so, include an outline or script of the debriefing.

The subjects will not be misled or deceived in any way.

Will there be a request for information which subjects might consider to be personal or sensitive? If so, please include a description.

There will be no request made of any subjects that they might find to be personal or sensitive.

Will the subjects be presented with materials which might be considered to be offensive, threatening, or degrading? If so, please describe.

The subjects will not encounter any offensive, threatening, or degrading materials.

Approximately how much time will be demanded of each subject?

Subjects will not be required to volunteer any time; all analyzed data is archived.

Who will be the subjects in this study? How will they be solicited or contacted? Provide an outline or script of the information which will be provided to subjects prior to their volunteering to participate. Include a copy of any written solicitation as well as an outline of any oral solicitation.

The subjects in this study will be transfer and associate degree completing students from Colby Community College who transferred to one of the six public universities in Kansas, during 2011-2013. The data is archived and provided to the researcher without any personally identifiable information. Subjects will not be solicited or contacted in any form or manner.

What steps will be taken to insure that each subject's participation is voluntary? What if any inducements will be offered to the subjects for their participation?

Data is archived and does not require voluntary participation. No inducements will be offered to any of the subjects for their participation.

How will you insure that the subjects give their consent prior to participating? Will a written consent form be used? If so, include the form. If not, explain why not.

Subjects will not be required to provide consent. The sole source of information needed for this study will be provided from institutionally collected student data.

Will any aspect of the data be made a part of any permanent record that can be identified with the subject? If so, please explain the necessity.

No personally identifiable information will be collected during this study. No data will be made part of any permanent record.

Will the fact that a subject did or did not participate in a specific experiment or study be made part of any permanent record available to a supervisor, teacher or employer? If so, explain.

The data to be collected will not contain any personally identifiable information. No data will be provided for any permanent record that would be potentially available to a supervisor, teacher, or employer.

What steps will be taken to insure the confidentiality of the data? Where will it be stored? How long will it be stored? What will be done with it after the study is completed?

The data was collected by the Director of Institutional Effectiveness and Research at Colby Community College. This student data will be labeled by student ID numbers. The researcher will not have access to any identify information connected with these student numbers. Data will be stored on a dedicated flash drive that will be locked in the researcher's personal desk, when not in use. The data will be stored for the duration of the study, upon completion of the study, the file will be destroyed.

If there are any risks involved in the study, are there any offsetting benefits that might accrue to either the subjects or society?

There are no risks involved in this study for any participant, nor are there any offsetting benefits that might accrue to the subjects or society.

Will any data from files or archival data be used? If so, please describe.

Archived student data will be used in this study. The data is archived and provides no personally identifiable information. The researcher obtained consent from the Colby Community College Board of Trustees to use student data and the institution's name in the study (please see Appendix A). This data will detail the higher education institution to which each student transferred upon leaving Colby Community College between the years 2011-2013. This data will also report if the student ultimately received a baccalaureate degree or are persisting toward degree completion.

This student data is classified by student ID numbers which protect the anonymity of the students but also allow for quality assurance on data collection.

COLBY COMMUNITY COLLEGE

1255 South Range • Colby, KS 67701 • (785) 462-3984
Fax (785) 460-4699 • www.colbycc.edu

August 19, 2016

Dr. Miller,

The Board of Trustees of Colby Community College is aware that Seth Carter will be using Colby Community College student data and the institution's name in his dissertation. By signing below, the Trustee approves Seth Carter to utilize student data and Colby Community College's name in his dissertation.

Mr. Arlen Leiker
KACCT Representative

Ms. Carolyn Armstrong
Vice-Chair

Mr. Quintin Flanagin
Treasurer

Mrs. Audrey Hines

Mr. Kenton Krehbiel
Board Chair

Mrs. Linda Vaughn

Appendix B: Baker University IRB Letter of Approval

Baker University Institutional Review Board

April 5, 2017

Dear Seth Carter and Dr. Miller,

The Baker University IRB has reviewed your research project application and approved this project under Exempt Status Review. As described, the project complies with all the requirements and policies established by the University for protection of human subjects in research. Unless renewed, approval lapses one year after approval date.

Please be aware of the following:

1. Any significant change in the research protocol as described should be reviewed by this Committee prior to altering the project.
2. Notify the IRB about any new investigators not named in original application.
3. When signed consent documents are required, the primary investigator must retain the signed consent documents of the research activity.
4. If this is a funded project, keep a copy of this approval letter with your proposal/grant file.
5. If the results of the research are used to prepare papers for publication or oral presentation at professional conferences, manuscripts or abstracts are requested for IRB as part of the project record.

Please inform this Committee or myself when this project is terminated or completed. As noted above, you must also provide IRB with an annual status report and receive approval for maintaining your status. If you have any questions, please contact me at EMorris@BakerU.edu or 785.594.7881.

Sincerely,

Erin R. Morris

Erin Morris PhD
Chair, Baker University IRB

Baker University IRB Committee
    Joe Watson PhD
    Nate Poell MA
    Susan Rogers PhD
    Scott Crenshaw

Appendix C: Colby Community College Letter of Approval

COLBY COMMUNITY COLLEGE

1255 South Range • Colby, KS 67701 • (785) 462-3984
Fax (785) 460-4699 • www.colbycc.edu

August 19, 2016

Dr. Miller,

The Board of Trustees of Colby Community College is aware that Seth Carter will be using Colby Community College student data and the institution's name in his dissertation. By signing below, the Trustee approves Seth Carter to utilize student data and Colby Community College's name in his dissertation.
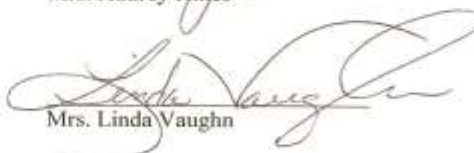
Mr. Arlen Leiker
KACCT Representative

Mr. Quintin Flanagin
Treasurer

Mr. Kenton Krehbiel
Board Chair

Ms. Carolyn Armstrong
Vice-Chair

Mrs. Audrey Hines

Mrs. Linda Vaughn