Characteristics and enrollment factors of post-degree students at a large, public, community college in the Midwest

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Characteristics and enrollment factors of post-degree students at a large, public, community college in the Midwest

by

Kelly L. Friesleben

A dissertation submitted to the graduate faculty in partial fulfillment of the requirements for the degree of DOCTOR OF PHILOSOPHY

Major: Education (Educational Leadership)

Program of Study Committee:
Janice N. Friedel, Major Professor
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The student author, whose presentation of the scholarship herein was approved by the program of study committee, is solely responsible for the content of this dissertation. The Graduate College will ensure this dissertation is globally accessible and will not permit alterations after a degree is conferred.

Iowa State University
Ames, Iowa
2017

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DEDICATION

To my husband Chad, and my children, Caitlyn and Nicholas.
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ACKNOWLEDGMENTS

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The traditional transfer pathway model has been challenged over the past few decades in more than one way through various forms of reverse transfer. Reverse transfer students are a large general category of students that begin at a four-year institution and transfer to a two-year institution. Townsend and Dever (1999) write that the term reverse transfer does not adequately describe the many different types within this subpopulation of community college students, and that early research failed to identify reverse transfer subgroups. Post-baccalaureate reverse transfer students (PRTS)—are a group of students that challenge the general perception of the traditional education path. PRTS are students who have already earned a degree at the bachelor’s or master’s level and have then chosen to enroll again at a community college (Townsend, 2000; Townsend & Dever, 1999).

The purpose of this study was to understand the motivations behind the enrollment of students at a large, public, community college in the Midwest who have already earned an associate's degree or higher by: (a) examining demographic and motivational differences among postbaccalaureate, postassociate, and non-degree students, and (b) identifying which factors matter most to PRTS when making the decision to enroll at a community college. The study was conducted through the lens of human capital theory. Human capital theory is based on the premise that both individuals and society obtain economic benefits from investment in people (Sweetland, 1996). The assumption for this study is that students invest (enroll) in higher education in order to gain economic benefit, which could be increased wages, personal satisfaction, or changes in employment status.

A quantitative methodological approach was used to determine associative and predictive factors that lead to PRTS enrollment at a community college. This study utilized
the Postbaccalaureate Reverse Transfer (PRT) Survey as the instrument to identify and measure characteristics and motivational factors for postbaccalaureate reverse transfer students that enrolled at a large, public community college in the Midwest. The PRT survey was designed specifically for this study to allow participants to self-identify as PRTS and indicate their educational and employment information to be analyzed in order to better understand the population. Participants were students above the age of 18 enrolled at a large, public, Midwest, community college. Data were collected through an online Qualtrics survey, and analyzed using SPSS statistical software.

This study contributed to the existing literature of postbaccalaureate reverse transfer students by (a) adding students that had previously earned an associate’s degree to the research, (b) adding recent research to a topic that has been stagnant for almost a decade, and (c) following up on two exploratory descriptive studies regarding PRTS in Iowa to provide a more in-depth analysis on the group of students. The findings from this study showed there were significant differences between non-degree and PRTS at each degree level. Findings from this study are informative to community college administrators, leaders, educators, and researchers interested in knowing more about various community college student groups.

Postbaccalaureate reverse transfer students (PRTS) are a category of students that have been enrolling at community colleges for decades, but primarily go unnoticed by the institutions they attend. The additional focus on postassociate students may encourage other researchers to study this group that seeks to earn an additional associate’s degree before transferring or entering the workforce. Understanding and seeking to enroll more PRTS could lead to increased enrollments and completions at community colleges, and more skilled employees to fill gaps in the workforce.
CHAPTER 1. INTRODUCTION

Background of the Study

Two-year institutions have been in existence for over 100 years, with roots in post-secondary vocational skills; nevertheless, many of the modern comprehensive community colleges attribute their beginnings to the Truman Commission Report of 1947 or the Higher Education Act of 1965 (Handel, 2013; Mellow, 2000). For the entirety of community college history, there have been students who enroll intending to transfer to another institution (Handel, 2013). Initially transfer students would move progressively upward through higher degrees on their way to earn a bachelor’s degree or higher. However, the behavior of transfer students has evolved over time to include reverse transfer (students transferring from a four-year to a two-year institution) and swirling (students attending multiple institutions), and these trends have been documented in the research since 1960 (Clark, 1960). Reverse transfer is a broad category of students who enroll at community colleges after attending four-year institutions. Postbaccalaureate reverse transfer students (PRTS) are community college students who have already earned a degree and use some of the baccalaureate credits to fulfill requirements for a two-year degree; this is one subcategory of reverse transfer (Townsend & Dever, 1999).

Community college missions have also evolved throughout history in response to changing student populations and various national initiatives and issues. President Obama set into motion a college completion initiative in response to high unemployment rates during the Great Recession from 2007 to 2009, by calling out a growing skills gap between the skills employers need and the skills potential employees currently have. He also highlighted the fact that the United States was falling behind other nations as an educated populous
necesary in the global marketplace (Kuntz, Gildersleeve, & Pasque, 2011; “Remarks of President Barack Obama -- Address to Joint Session of Congress | The White House,” 2009). It is due to the skills gap, the college completion agenda, increased accountability from state legislature and the U.S. Congress, declines in state general aid, and declines in student enrollment tied to the recovering economy that community colleges need to find innovative ways to increase the number of students who enroll and complete programs to address these issues.

With the persistence of PRTS enrollment and the myriad issues facing community colleges, it is necessary to explore PRTS and their potential impact on community colleges, higher education in general, and the economy. In this study, PRTS are investigated from the perspective of human capital theory (Sweetland, 1996). The present study employs a quantitative analysis in an effort to understand the characteristics of PRTS, the factors that influence these students to enroll at a community college, and how these students might differ from other student populations. The study focuses on students enrolled at a large, public, community college in the Midwest using data collected via an online survey.

PRTS are typically described in the literature as students who have already earned a bachelor’s degree or higher (Townsend & Dever, 1999); for the purpose of this study, PRTS referred to community college students who have earned an associate’s degree or higher. This chapter provides background of the dissertation research, and is divided into the following sections: statement of the problem, purpose of the study, theoretical perspective, research questions, significance of the study, overview of the dissertation, and definition of terms.
Statement of the Problem

Community college landscape in Iowa

There are 2,116 two-year institutions in the United States, and 995 of these are public institutions (National Center for Education Statistics (ED), 2016). The American Association of Community Colleges (AACC) has 1,108 member institutions, and 982 of these are public two-year colleges (American Association of Community Colleges (AACC), 2017). Iowa has 15 public community college districts spread across the state, and 13 are members of AACC. These community colleges were created as a result of Iowa Code 260 C, which was passed by Iowa legislature in 1965. The purpose of the legislation was to have comprehensive community colleges within reasonable distances of all Iowans so they could pursue any of the following broad areas of educational offerings: developmental education; continuing and adult education; workforce and economic development; liberal arts education; and, career and technical education (Friedel & Friesleben, 2016). The community colleges vary greatly in enrollment, but all 15 districts are classified as rural community colleges given the demographic makeup of Iowa (Hardy & Katsinas, 2007).

Community colleges across the nation have many issues with which to contend, and Iowa community colleges are no exception. Three of the issues will be a focus of this study due to the relationship to PRTS. These three issues are: (a) declining credit enrollment, (b) the college completion agenda, and (c) the skills gap. Each issue is discussed individually below.

Declining enrollment

Iowa community colleges have been experiencing a steady decline in enrollment since 2011 (see Figure 1.1) due to several factors. First, the number of students graduating
Figure 1.1. Credit enrollment in Iowa community colleges

from Iowa high schools each year has been stagnant, and according to the National Center for Education Statistics (NCES), there will be up to 5% fewer graduates in 2021-22 then there were in 2008-09 (see Figure 1.2) (Projections of Education Statistics to 2021, 2012). There are three public four-year institutions, 15 public two-year institutions, nearly 40 private institutions, and several for-profit institutions within the state of Iowa looking to recruit Iowa high school graduates. There has been an increase in recruitment from out-of-state institutions as well, which causes a very competitive environment for enrollment of Iowa students.

The Iowa Board of Regents, Iowa Workforce Development, and Iowa Department of Education collaborated to create The Iowa Postsecondary Readiness reports for the state of Iowa. Part of the online reports show where Iowa students between the 2008-09 and 2013-14 academic years enrolled after graduating from high school. During this five-year period, the number of students enrolling at private institutions or not enrolling anywhere remained fairly

Figure 1.2. Projected percentage change in the number of public high school graduates by state for school year 2008-2009 through 2021-2022

constant at 12-13% and 28-29%, respectively. However, the number of students who enrolled at community colleges decreased by four points from 37% to 33% while enrollment at four-year public institutions increased four points from 21% to 25% (Trends in statewide first year postsecondary outcomes, 2016). Additionally, the Iowa Board of Regents adopted a performance-based funding model in 2014 for the distribution of state general aid to the University of Iowa, Iowa State University, and University of Northern Iowa (“Performance-Based Funding Letter to the Members of Iowa’s General Assembly | Board News | Board of Regents State of Iowa,” 2014). This model resulted in an emphasis and incentive for the three state universities to enhance their recruitment, admission, and enrollment of in-state undergraduate students. The responses of the universities to this incentive resulted in
strategies that varied for each institution, and included items such as free summer tuition, and an increase in merit-based scholarship offerings.

There are a number of factors that contributed to the change in enrollment behavior of Iowa graduates from two-year to four-year institutions, but one reason is the state of the economy, as community college enrollments tend to decrease as the economy improves (Smith, 2015a). At the height of the Great Recession in 2011, Iowa community colleges experienced record enrollments and had a unique challenge of needing to hire additional faculty and offer additional sections of classes in order to meet demand for enrollment (Iowa Department of Education, 2017). As the economy began to improve, credit enrollments began to steadily decrease – as demonstrated in figure 1.1 (Iowa Department of Education, 2017). Once the economy began to improve in 2011, new direct from high school students tended to enroll at four-year institutions rather than at two-year institutions, as had been the trend during the Great Recession. As such, community colleges have needed to look to other student populations to recruit and serve in order to remain solvent.

**College completion agenda**

The college completion agenda is relatively new in the history of higher education, and its inception can be attributed to two different speeches given by President Barack Obama regarding the United States falling behind in global educational attainment standings and the high unemployment rate at the time (Kuntz et al., 2011; “Remarks of President Barack Obama -- Address to Joint Session of Congress | The White House,” 2009). Based on these speeches, the President created the American Graduation Initiative (AGI), as a way to increase certificate and degree attainment at the postsecondary level. President Obama
specifically identified community colleges and their various credentials offered as the driving force necessary to increase the number of Americans earning postsecondary awards.

Beyond President Obama’s speeches and policies, several education-affiliated organizations including the College Board Advocacy and Policy Center, Lumina Foundation for Education, and the U.S. Department of Education created their own goals and recommendations for college completion. Complete College America (CCA) is an organization focused on the completion agenda that was founded in 2009 in response to President Obama’s speeches in an effort to address the need for increased degree completion in the United States. The CCA began with seventeen member states, and has grown to 33 member states that agree to their guiding principles (Complete College America, 2013). These 33, and many other non-member states, have set their own statewide completion goals. The National Governor’s Associate report included language on completion, as then-Governor Terry Branstad of Iowa made an announcement in 2015 that 70% of Iowans should have some education or training past high school by the year 2025, and called this initiative Goal 2025 (Carnevale, Smith, Gulish, & Hanson, 2015). All of these various initiatives to increase postsecondary credential completion shine a spotlight on community colleges and their completion metrics.

Skills gap

The college completion agenda was one outcome of President Barack Obama’s speeches based on his overall education agenda, but he also highlighted the high unemployment rate at the time. During his remarks, he indicated that the unemployment rate was partially due to what he called a “skills gap” between the jobs available and the technical or educational skills of those currently unemployed and those entering the workforce
The completion agenda and the skills gap are separate issues that are very closely related. An increase in completion rates results in an increase in the number of skilled workers available to fill middle skills job that currently sit empty. As college completion increases, the skills gap decreases. It is important to note that this statement is true when community colleges partner with employers on training programs to meet specific training needs and students enroll in these specifically matched programs.

Many jobs available nationally require at least some technical postsecondary training that can be provided by community colleges. Then-Governor Terry Branstad secured a National Governors Association Talent Pipeline Grant in order to conduct a study of the education and job pipeline in the state of Iowa that was facilitated by the Georgetown University Center on Education and the Workforce (Carnevale et al., 2015). According to the study, 68% of the jobs in Iowa by 2025 will require some form of education and training beyond high school, which is higher than the national average. Currently, Iowa has a 46.4% educational attainment rate beyond high school, which is not high enough to meet the projected need for skilled employers (Matthews & Lumina Foundation for Education, 2014). The most job growth will occur in the “middle-skill” areas of: (a) healthcare and social assistance, (b) finance and insurance, and (c) administrative and support and waste management and remediation services (Carnevale et al., 2015, p.9). More Iowans will need to pursue the necessary technical training in the industry sectors that will see the most job growth, and community colleges will need to recruit and train these students to fulfill both the 70% completion goal and the projected job growth by 2025. The challenge is that the number of direct from high school students going to college and subsequently entering the
workforce won’t be great enough to address the needed growth in educational attainment in order to fill the projected job growth. Community colleges will need to look to recruit adult learners who may or may have not previously earned a degree to train or learn new skill areas to meet the needs of employers in their communities.

**Purpose of the Study**

This study was undertaken to understand the motivations behind the enrollment of students at a large, public, community college in the Midwest who have already earned an associate's degree or higher. The study focused on educational and career history and goals for the students at the specific institution. There were two primary purposes of this study: (a) examine demographic and motivational differences among postbaccalaureate, postassociate, and non-degree students; and (b) identify which factors matter most to PRTS when making the decision to enroll at a community college.

**Theoretical Perspective**

The theoretical framework used for this study is human capital theory (Becker, 1993). Human capital theory is based on the premise that both individuals and society obtain economic benefits from investment in people (Sweetland, 1996). The lead researcher in the current study sought to use this concept to help inform the study and as a means to frame the study. Through the lens of human capital theory, PRTS are opting to invest in themselves in order to obtain economic benefits. Economic benefits could be an increase in wages, as well as entry into a new career field or to gain additional expertise in a current field of study or work. Community colleges provide the investment mentioned in HCT. The investment is provided through delivery of education, availability of academic resources, and offering of services to facilitate student success. According to HCT, when PRTS invest in community
college education, they should see growth in academic knowledge, personal growth, and economic benefits such as new employment and increased earning potential.

The motivational variables used in this study represent the students’ choices to invest in themselves, while the survey data reveal the desired economic benefits the participants seeks to gain through their investment in higher education. Additionally, society should benefit from each student’s personal investment, as the successful completion of a credential will enable additional skilled workers to help fill the skills gap. Furthermore, increased and improved employment will result in a populace with a larger tax base that has more capital to reinvest in and boost the local economy.

**Research Questions**

The following questions were used to guide the researcher in the collection and analysis of data for this study:

1. What are the characteristics of postbaccalaureate reverse transfer students at a large, public, community college in the Midwest?

2. Are there statistically significant motivational differences among postbaccalaureate, postassociate, and non-degree students enrolled at a large, public, community college in the Midwest?

3a. Is there an association between gender and previous degree type students enrolled at a large, public, community college in the Midwest?

3b. Is there an association between race/ethnicity and previous degree type students enrolled at a large, public, community college in the Midwest?

3c. Is there an association between marital status and previous degree type students enrolled at a large, public, community college in the Midwest?
3d. Is there an association between degree aspiration and previous degree type students enrolled at a large, public, community college in the Midwest?

3e. Is there an association between major change and previous degree type students enrolled at a large, public, community college in the Midwest?

4a. Can previous degree earned be predicted by demographic (age, gender, ethnicity, marital status, dependents) and motivational enrollment factors?

4b. Can previous degree type be predicted by demographic (age, gender, ethnicity, marital status, dependents) and motivational enrollment factors?

**Significance**

This study was conducted in response to the lack of recent research in the literature on PRTS including postassociate students, and as a follow-up to the two exploratory studies completed on PRTS in Iowa (Friedel & Friesleben, 2016; Leigh, 2009). Both of the exploratory studies demonstrated the prevalence and stability of the PRTS population in Iowa.

The majority of research regarding PRTS has focused only on students who have earned at least a bachelor’s degree. Some PRTS highest degrees earned were associate degrees, whereas a few recent studies have begun to include these postassociate degree earners in data and research. The first known mention of students earning two associate degrees was in an Inside Higher Ed article describing students enrolled at a college in Florida who were planning to earn both an Associate of Science (A. S.) and an Associate of Arts (A. A.) degree before transferring to a four-year institution (Smith, 2015). These students wanted both the technical skills provided by the A. S. degree and the liberal arts education provided by the A. A. degree to better prepare for future education and entering the
workforce. The second inclusion of postassociate degree earners in the literature was in a 2015 report on community college completion compiled by The American Association of Community Colleges (AACC). In the college completion report, the AACC included data on associate degree completers (graduates) who had previously earned a postsecondary credential, and referred to the additional credentials or awards these students earned as subsequent associate degrees and subsequent certificates (American Association of Community Colleges, 2015). The community college completion report data were comprised of the highest degree earned at all levels, which did include students that had previously earned an associate degree. Last, Friedel and Friesleben (2016) included postassociate degree earners in their research on the prevalence of PRTS in Iowa from 2010-2014.

The college completion study was conducted by the AACC for the academic years of 2010-2011 to 2013-2014. Over this four-year period, approximately 8% of community college completers in the United States had already earned a bachelor’s degree (American Association of Community Colleges, 2015). Comparatively, the state average for bachelor degree holders at Iowa community colleges was 1.7% for fiscal years 2010-2014, with some individual institutions approaching 4% (Friedel & Friesleben, 2016). This is much lower than the national average, but still is a significant enough of a population within Iowa to be researched.

The comparison is closer when the definition of PRTS is expanded beyond baccalaureate degree earners. In the same report, the AACC noted a national average of approximately 100,000 subsequent associate degrees and 60,000 subsequent certificates were earned each academic year. The subsequent degrees and certificates represent a student
population that had already earned a previous credential at any level. Friedel and Friesleben (2016) did not have data on second awards but, instead, reported on PRTS enrollment (to include postassociate) from FY 2010-2014. They found that 21,422 or 2.9% of Iowa community college students were PRTS during that time period.

This study provides information regarding the PRTS student subpopulation to community colleges including demographic information, educational background and intentions (to include programs of study), and employment background and aspirations. The information shared can be used to recruit, identify, understand, and serve this particular student population. This is important due to the steady decline in enrollment at Iowa's community colleges.

**Definition of Terms**

The following terms were defined for use in this study:

**Awards:** Awards are different levels of recognition given by an institution for the completion of a specified curriculum, which may include diplomas, certificates, associate, baccalaureate, or graduate degrees.

**Career Cluster:** Career clusters are groups of similar career and technical programs, otherwise known as occupational categories. The sixteen career clusters as defined by the Carl D. Perkins Grant are:

- Agriculture, Food & Natural Resources
- Architecture & Construction
- Arts, A/V Technology & Communications
- Business, Management & Administration
- Education & Training
- Finance
- Government & Public Administration
- Health Science
- Hospitality & Tourism
- Human Services
• Information Technology
• Law, Public Safety, Corrections & Security
• Manufacturing
• Marketing
• Science, Technology, Engineering & Mathematics
• Transportation, Distribution & Logistics

Completer Reverse Transfer: Another term used in the literature to refer to postbaccalaureate reverse transfer students. These are students that have completed a degree prior to transferring to a community college.

Linear Transfer: A traditional upward model of matriculation through higher education where a student will enroll in a higher-level degree after graduation.

New Reverse Transfer: Students that transfer credit back to a community college after enrolling at a baccalaureate institution for the purpose of retroactively earning an associate’s degree.

Non-degree student: Students enrolled at a community college that have not completed a previous degree.

Postassociate: Students that enroll at a community college after earning an associate’s degree.

Postbaccalaureate: Students that enroll at a community college after earning a bachelor’s degree.

Postbaccalaureate Reverse Transfer Students (PRTSs): Students who have already earned an associate’s degree or higher that enroll at a community college.

Postgraduate: Students that enroll at a community college after earning a graduate degree.

Qualtrics: An online survey software used to gather survey responses.

Reverse Transfer: Students who transfer from a four-year institution to a two-year institution.
**Skills Gap:** The difference in the skills required by employers for a job and the actual skills possessed by the employees.

**Traditional College Student:** Students age 18-24 that usually enroll in college directly after graduating from high school.

**Undergraduate Reverse Transfer Students (URTSs):** Students who transfer from a four-year to a two-year institution.

**Overview of the Dissertation**

This dissertation contains five chapters. The 1st chapter provided an introduction and overview. The 2nd chapter is comprised of a literature review that focuses on research that explores the evolution of transfer students, the history of community colleges, the expansion of the community college mission, and an overview of the skills gap and college completion agenda. The 3rd chapter focuses on the methodology (survey) and methods used for this study. The 4th chapter provides an analysis of the survey data collected, and the 5th chapter concludes with a discussion of the findings, implications for practice, and recommendations for further research.
CHAPTER 2. LITERATURE REVIEW

Two-year public institutions known as community or junior colleges are relatively new in the history of higher education. Since the creation of junior colleges, the mission of these institutions has shifted and expanded, and the types of transfer students and pathways have changed. Chapter 2 provides a review of the literature on postbaccalaureate reverse transfer students. The literature review is organized into six primary sections: (a) traditional transfer students; (b) types of reverse transfer students; (c) community college history and mission; (d) skills gap and completion agenda; (e) postbaccalaureate reverse transfers in community colleges; and (f) human capital theory. A literature map is provided at the end of this chapter to illustrate the organization of the presentation and discussion of this review.

Traditional Transfer Students

Historically, the traditional path to higher education moved upward in a linear fashion. A person in pursuit of a degree would begin at the undergraduate level, seeking an associate’s degree, a bachelor’s degree, or both through an upward transfer model. The student could then move on to a master’s degree, and potentially a terminal degree at the doctoral or professional level if so desired. The term transfer student generally refers to a student who initially enrolled at one postsecondary institution and then chose to switch to a different institution. This type of transfer can either be lateral, which is the transfer between two institutions of the same type, such as two-year or four-year colleges or universities, or it can be linear, which is the transfer from a two-year institution to a four-year institution. Linear transfer is usually what most people think of when speaking about transfer students in higher education. The initial concept of linear transfer was born with the creation of the first
junior college, but the transfer pathway truly took hold as an outcome of the community college movement after World War II (Handel, 2013).

Each year, community colleges enroll about 40% of all college undergraduates in the United States, and 81% of these students indicate they intend to transfer on to a four-year institution (Monaghan & Attewell, 2014). Traditional linear transfer students are prevalent across the United States, and most policies and services at community colleges and four-year institutions are created to meet the needs of the traditional age college student. The traditional transfer student is only one of many different types of transfer students that enroll at community colleges nationwide.

**Types of Reverse Transfer Students**

The traditional transfer pathway model has been challenged over the past few decades in more than one way through various forms of reverse transfer. Reverse transfer students are a large general category of students that begin at a four-year institution and transfer to a two-year institution. Townsend and Dever (1999) write that the term reverse transfer does not adequately describe the many different types within this subpopulation of community college students, and that early research failed to identify reverse transfer subgroups. Three reverse transfer subgroups have since been defined through research and will be further explored.

**Undergraduate**

The first reverse transfer subgroup is comprised of undergraduate reverse transfer students (URTS). URTS are students that begin their education at a four-year institution and then transfer to a two-year institution (Townsend & Dever, 1999). Another term used to refer to URTS is non-completer reverse transfers (Kajstura & Keim, 1992). URTS can be
further divided into two subgroups: temporary reverse transfer students and full reverse transfer students. Temporary reverse transfer students traditionally take coursework during the summer in order to transfer the credit to their primary four-year institution for the completion of a bachelor’s degree. Comparatively, full URTS transfer to a community college for a longer period of time for various reasons. Clark (1960) first noted the existence of URTS in a study of California Junior Colleges by describing students that were purposely diverted to two-year schools after poor academic performance at a four-year school.

Heinze and Daniels (1970) expanded the study of URTS to a national level by surveying a sample of community colleges. They were also the first to refer to the group of students that enrolled at a community college after first attending a baccalaureate institution as reverse transfers. The study did not differentiate between completer or non-completer reverse transfers, but instead focused on those who had previously attended a four-year institution. Heinze and Daniels found that about 9% of the student population from the participating community colleges were URTS, and concluded this was large enough population to warrant further study to determine their specific needs. The amount of URTS enrolled at community colleges nationally increased to over 16% by 1983, but that percentage varied greatly by institution (Hudak, 1983). None of these early studies identified a sub-population of reverse transfer as having completed a previous degree.

**Postbaccalaureate**

The second reverse transfer subgroup—post-baccalaureate reverse transfer students (PRTS)—is a particular population that challenges the general perception of the traditional education path. PRTS are students who have already earned a degree at the bachelor’s or master’s level and have then chosen to enroll again at a community college rather than
pursue the next degree congruent with the traditional linear progression model (Townsend, 2000; Townsend & Dever, 1999).

**Terminology**

The first known reference to PRTS in the literature was in 1976. Rue (1976) referred to students who enrolled after earning bachelor’s degrees as *grad–undergraduates*. Other researchers used the term *completer reverse transfer* to define these students (Kajstura & Keim, 1992; Winter & Harris, 1999; Winter, Harris, & Ziegler, 2001). The most recent and common reference to this group in the literature is *postbaccalaureate reverse transfers*, and was initially made common by Townsend (Barnes & Robinson, 1999; Brand, 2005; Friedel & Friesleben, 2016; Leigh, 2009; Quinley & Quinley, 1999; Slark, 1982; Townsend & Dever, 1999; Townsend & Lambert, 1999).

There is not an agreed upon way to describe this population, as the idea of reverse indicates these students are going backwards, and transfer indicates that the two-year institution is accepting credit from the four-year institution. For these reasons, the label of reverse transfer is a misnomer given the complex enrollment patterns of these students (Bach et al., 1999; LeBard & ERIC Clearinghouse for Community Colleges, 1999). Despite these issues, no new terminology has been used to refer to students who enroll at a community college after earning a degree.

**Demographics**

The demographics of PRTS may vary greatly across the different studies, which make it difficult to create a broad generalization of this population. The variance is due to the difference in data collected, how certain demographic characteristics are categorized for each individual study, and the location of the community college (Townsend & Dever, 1999).
Demographic categories utilized also are not consistent across studies on PRTS. While all studies report on age, gender, and race/ethnicity, there is an inconsistency for employment status, number of dependents, and marital status (Friedel & Friesleben, 2016).

There is some consistency with age of PRTS, as several studies reported the average age to be somewhere in the upper 30s. Leigh (2009) indicated in a study of Iowa PRTS that the average age is 35. A statewide study in Kentucky found the average age to be 37.4 (Winter et al., 2001), which is similar to findings in Illinois where the average age was 37 in one study (Kajstura & Keim, 1992), and 38.5 in another (Reusch, 2000). Friedel and Friesleben (2016) found the average age of PRTS in Iowa to be 27; while lower than in other studies, this average age was explained in part because associate degree earners were included in the PRTS population. The difference in age among degree earners was not disaggregated as a part of the study in Iowa for an adequate comparison to the other studies.

Race/ethnicity of PRTS is another category demonstrating some consistency. The research indicates that the majority of PRTS that participated identify as Caucasian or White (Brand, 2005; Friedel & Friesleben, 2016; Leigh, 2009; Reusch, 2000; Townsend, 2009; Winter et al., 2001). Beyond students identifying as White, the percentage of PRTS that identify as African American, Latino/a, Asian, Native American, or other race/ethnicities, varied greatly depending on the location of the community college. Studies completed in the Southern part of the United States or in large metropolitan areas generally found larger populations of African American PRTS.

Gender cannot be so easily generalized, as there was a mix of studies that found PRTS were primarily male (Leigh, 2009; Slark, 1982) and female (Brand, 2005; Friedel & Friesleben, 2016; Kajstura & Keim, 1992; Winter et al., 2001). Townsend and Dever (1999)
also reported that PRTS tend to be married, have children, and come from higher socio-economic statuses, but not all studies gather and report on those data categories. The two Iowa reports on PRTS did not report on these categories (Friedel & Friesleben, 2016; Leigh, 2009).

**Enrollment motivation**

A common theme among the research on PRTS is centered on the motivations these students had for enrolling at a community college instead of pursuing a higher degree. Quinley and Quinley (1999) summed up the educational goals to the following five categories: (a) career exploration, (b) current job skills update, (c) supplemental income, (d) new career, and (e) personal interest. The two primary underlying motivations behind the five categories are either personal or financial. While some of the educational goals for PRTS are to satisfy personal goals or to switch to an area where they have more interest, others seek to enhance skills or seek new careers in order to earn higher salaries. Townsend (2009) also researched the motivations for PRTS and found that students were primarily wanting career change or advancement. The research also included reasons for college choice, and the respondents indicated that they were looking for a location that was close to home, included program of choice, was low cost, and provided an ease of transition back into college (Townsend, 2009).

**Postassociate degrees**

The literature regarding PRTS to this point is limited to students who earned a bachelor’s degree or higher before enrolling at a community college. A study completed on PRTS in Iowa included associate’s degree earners for the first time. Friedel and Friesleben (2016) found that over a four-year period from 2010 to 2014 there were approximately
15,300 students enrolled at Iowa community colleges who had previously earned an associate’s degree as their highest degree earned.

A search of the literature found many references to lateral transfer between two-year institutions, but no reference to students who chose to enroll for a second associate’s degree before deciding to transfer and complete a four-year degree. One article written about this phenomenon at a college in Florida describes students who intended to complete both Associate of Arts (A.A.) and Associate of Science (A.S.) degrees prior to earning bachelor’s degrees (Smith, 2015). The prevalence of postassociate transfer students both nationally and in Iowa prior to 2010 is unknown.

New

A third subgroup of reverse transfer students is becoming more prevalent in higher education. Although this type of reverse transfer will not be the focus of this study, it is important to include all versions of reverse transfer. New reverse transfer emerged around 2006, partially in response to the college completion agenda, and can be defined as “the transferring of credit from a four-year college back to a two-year college to retroactively earn an associate’s degree” (Friedel & Wilson, 2015). The new reverse transfer students transfer from a two-year institution to a four-year school prior to completing an associate’s degree, and then transfer credits from the baccalaureate institution back to the two-year college to be applied toward the completion of an associate’s degree. Agreements for new reverse transfer policies and practices among two-year and four-year institutions have been implemented on both institutional and statewide levels as a way to increase completion rates at community colleges. The concept of reverse transfer in this scenario refers to the transfer of the credit not the individual (Friedel & Wilson, 2015).
Reverse Transfer Students in Iowa

There have been three studies completed regarding reverse transfer students in Iowa. The first was completed in 1973 by Kuznik, the second in 2009 by Leigh, and the third by Friedel and Friesleben in 2016. The three studies are further examined as follows.

The first research study completed by Kuznik (1973) did not differentiate between the types of reverse transfers. The study focused on learning more about reverse transfer students in Iowa, and included results from a questionnaire completed by 315 reverse transfer students enrolled at Iowa community colleges. Kuznik (p. 5) noted that the primary reasons these students enrolled at a community college after being enrolled at four-year institutions were: (a) low tuition, (b) a location close to home and (c) to raise their GPA; while the primary end goals were to: (a) develop mind and intellectual abilities, (b) secure vocational or professional training, (c) earn a higher income and (d) develop personality. The study did not report many demographics regarding reverse transfer students at the time, other than they were primarily single. Neither age nor gender was reported, and the majority of other personal information focused on parental education and family income (Kuznik & others, 1973).

Reverse transfer students were primarily enrolled in arts and sciences programs, while only a portion of those were enrolled in vocational-technical programs. The specific educational pursuits of these students were not collected beyond those primary two educational categories.

The second study completed by Leigh (2009) was a descriptive exploratory study of PRTS in Iowa between the years 2006 and 2008. This study—the first of its kind examining Iowa PRTS—provided a foundation for further research regarding this student population in
the state. At the time of the study, PRTS in Iowa were found to be primarily white males with an average age of 35. Gender, age, and race/ethnicity were the only demographics collected, and did not include marital status or employment. The difference in demographic information collected between Kuznik (1973) and Leigh (2009) does not allow for a comparison between the reverse transfer students that attended in the 1970s and the 2000s.

Federal career clusters were used to identify the types of educational programs PRTS were pursuing. Leigh (2009) found that PRTS were primarily enrolled in either a college transfer track program—e.g., liberal arts and sciences—or in a health science field. Those two career clusters dominated the numbers for the years 2006 to 2008; the third most common educational program varied widely, and depended on the institution and the fiscal year reported.

Leigh (2009) found that an average of 2,182 PRTS were enrolled at Iowa community colleges for each of the three years of data reviewed, representing approximately 2% of total enrollment. The data reported indicated a large enough population for the author to recommend additional future research on PRTS in Iowa, but the numbers did not include students that had already earned an associate’s degree. Due to the exploratory nature of the study, motivations of PRTS were not collected.

The third study was another descriptive exploratory study on PRTS in Iowa completed by Friedel and Friesleben (2016). The project provided a continuation from the previous study completed by Leigh (2009), as it examined data regarding PRTS from fiscal years 2010 to 2014, and provided a longer and more in-depth look at PRTS in Iowa in an effort to identify potential trends. The project also expanded upon the initial study, as it added associate’s degree earners who chose to reenroll in community colleges instead of
transferring to four-year institutions. Anecdotal reports from community college administrators indicate that there may be a substantial amount of students enrolled for a second associate’s degree at their institutions.

PRTS in Iowa from 2010 to 2014 were typically white females around age 27 (Friedel & Friesleben, 2016). The authors stated that the difference in gender and age from the data Leigh (2009) collected from 2006-2008 could be due to the inclusion of associate’s degree earners, as the research did not disaggregate demographic information by degree level. The inclusion of postassociate students does not allow for an equal comparison to the two previously discussed studies with regard to demographic information.

Friedel and Friesleben (2016) also utilized federal career clusters for indicating the programs PRTS enrolled in at Iowa community colleges. Career clusters are made up of groups of classes of instructional (CIP) codes that are used by the National Center for Educational Statistics (NCES) in order to provide consistency in the tracking and reporting of data for fields of study. The two most common career clusters in the study were health sciences and a category titled “not a clustered CIP” which would most likely pertain to liberal arts and science students on a transfer track (Friedel & Friesleben, 2016). The third most common career cluster varied by community college and fiscal year, which was similar to the Leigh’s (2009) findings.

The average number of postbaccalaureate students per year from 2010 to 2014 was 2,485, just slightly more than the 2,182 that Leigh (2009) reported for 2006 to 2008. However, with the inclusion of postassociate students, each year there were approximately 5,000 or more total PRTS enrolled at Iowa community colleges. The amount of PRTS varied greatly among the institutions, where some schools saw that PRTS comprised more than 4%
of their overall student populations. Friedel and Friesleben (2016) found that there were enough PRTS in Iowa consistently over almost a decade to determine the enrollment of this population was not a phenomenon and was most likely to continue.

The literature shows there are several types of transfer students: traditional, undergraduate reverse transfer, postbaccalaureate reverse transfer, and new reverse transfer that are a part of the national higher education landscape. Research also shows that the postbaccalaureate group is prevalent in Iowa community colleges. Before proceeding with additional research with PRTS in Iowa, it is first important to examine literature regarding community colleges and how they evolved. This will allow for a better understanding how PRTS fit within community college enrollment and culture.

**Community College History and Mission**

Joliet Junior College in Illinois was founded in 1901, and is considered by many historians as the first community college in the United States (Handel, 2013). Joliet Junior College originated from the idea of creating two separate divisions—the junior and senior colleges—at the University of Chicago. Students that completed junior college and left were awarded associate’s degrees, and only the highest achieving students would continue on to the senior college. An associate’s degree was designed to serve as a terminal degree for those who did not meet academic qualifications to move onto a university (Handel).

Other states took notice of the model created by University of Chicago President, William Rainey Harper, and the concept of junior colleges spread to California in 1902, and then to Michigan and Missouri in the years that followed (Geller & George Mason Univ., 2001; Handel, 2013; Wattenbarger & Witt, 1995). Early junior colleges served as sorting institutions for universities with two distinct missions: a terminal degree mission that
included more technical education, and a transfer pathway that allowed students to complete their studies at a four-year institution. The transfer pathway function was widely accepted as the primary mission of early community colleges. Early relationships between two-year and four-year institutions were strong, and many community colleges were founded due to influence and resources provided by the four-year universities.

Growth in the numbers of community colleges was slow during the early 1900s. In 1921, there were over 200 community colleges in the nation due to an increase in student numbers after World War I (Geller & George Mason Univ., 2001). The leap from 9 to over 200 community colleges in just 20 years caused the U.S. Department of Education to hold its first meeting of United States Junior Colleges. This meeting would continue, and would become what is known today as the American Association of Community Colleges (AACC) (Geller & George Mason Univ.). The Great Depression of the 1920s led to an additional increase in enrollment despite the lack of funding to junior colleges. The increase in enrollment was most likely due to job loss and lack of employment options (Deegan, 1985).

It was the community college movement that occurred in the decades after World War II that facilitated rapid growth in the number of two-year institutions, with the majority of the growth occurring during the 1960s and 1970s. The community college movement in the latter half of the 20th century was set into motion by the creation of the Serviceman’s Readjustment Act of 1944, otherwise known as the G.I. Bill, which made higher education more accessible to the general public through financial support, and The Truman Commission Report of 1947, which encouraged the creation of more technical programs in order to serve the needs of the local community. (Handel, 2013; Mellow, 2000).
War continued to be a catalyst for enrollment growth for community colleges. The Korean War allowed draft exemptions for full-time college students, and the G.I. Bill was expanded to include veterans that served during this conflict through the 1952 Veterans’ Readjustment Act (Wattenbarger & Witt, 1995). The 1960s saw a great increase in student’s enrolling in college due to the generation known as Baby Boomers coming of age, and the number of community colleges grew to over 800 (Geller & George Mason Univ., 2001). During the Vietnam War Era, the Higher Education Facilities Act and the Vocational Education Act of 1963 were two spending bills that provided allocations to community colleges to increase and improve facilities and to provide increased vocational-technical offerings (Wattenbarger & Witt, 1995). The Higher Education Act of 1965 provided additional educational funding to assist lower income families along with small and underdeveloped colleges (Wattenbarger & Witt). The conclusion of the Vietnam War once again resulted in an influx of students at community colleges.

Community colleges continued to grow and many became the comprehensive community colleges known today. These colleges provide education in the forms of vocational/technical, liberal arts and sciences, and non-credit bearing for the facilitation of lifelong learning.

**Expanded mission**

As stated previously, the initial mission for a community college was to offer terminal two-year degrees and lower division general education coursework as a transfer pathway to a bachelor’s degree. The Truman Report that fueled the community college movement also created a shift in the mission of community colleges. The authors of the report recommended that the educational offerings should be more varied than general education coursework,
working to prepare students to transfer up to a university. Semiprofessional, terminal, and recreational programs were added in order to meet the educational, commercial, and service needs of the community, and as a result expanded college access to more people by providing a variety of educational opportunities close to home. Accessibility and community responsiveness were now additional hallmarks of the community college mission. This change to the mission was congruent with the desires of community college and university presidents at that time due to their desire to divert students from four-year institutions (Handel, 2013).

Junior colleges that embraced the expanded mission are referred to as comprehensive community colleges and are similar to today’s community colleges. Mellow (2000) created a generic mission statement that could apply to any of these institutions and describes the broad initiatives that compete for attention and resources:

Institution X, a comprehensive community college, prepares students for successful transfer to four-year colleges, develops a globally competitive workforce, enriches the community with lifelong educational experiences, and provide revitalization, leadership in economic development, community service, and organizational excellence. (Mellow, 2000, p. 5)

Despite these expanded responsibilities, the transfer pathway continues to be the primary mission of community college. This is evident in that almost seventy-five percent of new community college students continue to indicate through various studies that they plan to transfer onto a four-year institution. This transfer pathway still assumes a linear-upward model for a student to attend a university in order to earn a bachelor’s degree (Handel, 2013).

Skills Gap and Completion Agenda

Jamie Merisotis, President of Lumina Foundation for Education, cited data from the Organization for Economic Co-operation and Development that the United States’ college
attainment rate in 2013 was only 42% for citizens aged 25-34 (Matthews & Lumina Foundation for Education, 2013). This percentage places the United States 13th among the developed nations in the world with regard to degree completion. In addition to that sobering statistic is the fact that by the year 2020, 65% of all jobs in the United States will require some form of post-secondary education (Carnevale, Smith, & Strohl, 2013). As of 2011 only 38.7% of citizens aged 25-64 had completed a two- or four-year degree (Matthews & Lumina Foundation for Education, 2013). This deficit of college-educated citizens widens the increasing skills gap in place today that affects the unemployment rate and global standing for the United States.

In response to the widening skills gap, national unemployment issues, and the United States’ falling global standing in an educated citizenry, President Barack Obama introduced the American Graduation Initiative (AGI) in a speech given on July 14, 2009 (Kuntz, Gildersleeve, & Pasque, 2011; “Remarks of President Barack Obama -- Address to Joint Session of Congress | The White House,” 2009). The AGI was created to increase the number of post-secondary certificates and degrees attained by an additional five million by 2020 (Kotamraju & Blackman, 2011). Initial reaction to this initiative was primarily positive from key organizations tied to the rising college completion agenda. Representatives from Lumina, The College Board, American Association of Community Colleges, Association of Community College Trustees, and the U. S. Department of Education all commented favorably on the fact that money was to be dedicated specifically to community colleges in order to improve certificate and degree attainment. According to Jane Oates, Assistant Secretary of Labor for Employment and Training at the U.S. Department of Labor, “AGI will ensure that both parts of the community college mission – offering students of all ages
the education needed to gain good jobs, and providing pathways to postsecondary degrees – are fulfilled” (“Reacting to the American Graduation Initiative,” 2009, p. 20).

The creation of AGI fueled a nation-wide movement to increase enrollment in community college programs and put pressure on institutions to increase graduation and transfer rates to four-year institutions. This included the National Governor’s Association (NGA). Following President Obama’s speech, the NGA made college completion a focus and facilitated reports that looked at completion metrics across the nation. Critics of the completion agenda are concerned the mission of access may be compromised as community colleges attempt to increase completion rates while meeting the demands of creating a well-skilled workforce. Bragg and Durham (2012) stated that schools may be tempted to reduce access to students that are under prepared or deemed incapable of completing a higher education degree as a way to artificially inflate metrics related to the completion agenda, including graduation rates. Lumina has been tracking America’s progress to meet their goal of 60% of adults completing a credential by 2025. Between 2008 and 2015, the national attainment rate has risen 7.9 percentage points from 37.9% to 45.8%. While progress has been made, there is still a long way to go in order to meet a goal of 60% by 2020 (Lumina Foundation for Education, 2017).

Major players for college completion

**College Board Advocacy and Policy Center**

College Board is an organization that was created to provide equality and access to higher education. The organization continues to further efforts to increase education quality for all students. College Board created a Commission on Access, Admissions and Success in Higher Education in 2007 with the purpose of increasing the number of college graduates in
the United States. This commission published a report in late 2008 that identified a completion goal and recommended ten areas spanning P-16 education that should be continually reviewed for progress. The commission’s report was released prior to President Obama’s address to the joint session of Congress, but it was the speech that created publicity for the concept of a completion goal.

**Complete College America**

Complete College America (CCA) was established in 2009 after President Obama issued his education challenge to the nation to increase the amount of college graduates by 2020. The mission of CCA is: “to work with states to significantly increase the number of Americans with quality career certificates or college degrees and to close attainment gaps for traditionally underrepresented populations” (Complete College America, 2013). After its inception, CCA contacted governors to extend an invitation to join their Alliance of States. Seventeen states initially agreed to join, and now a total of 33 states are members of the alliance. Alliance states have agreed to set completion goals, collect and report common progress measures, and develop action plans to move key policy levers (Complete College America, 2013).

In addition to the Alliance of States, CCA has partnerships with many different organizations within education policy and research. CCA uses the data and knowledge of these different groups to identify action items to forward the completion agenda. In 2013, CCA published a report entitled *The Game Changers*. The game changers are five strategies that CCA believes will make a dramatic impact on the college completion agenda. These five strategies are: (1) performance-based funding, (2) co-requisite remediation, (3) full-time
is 15 credits, (4) structured schedules, and (5) guided pathways to success (Complete College America, 2013).

**Lumina Foundation for Education**

The Lumina Foundation for Education (Lumina) is the largest private foundation in the United States that is solely focused on increasing Americans’ success in higher education (“About Us | Lumina Foundation,” 2013). It is due to this stature that Lumina has the ability and responsibility to impact change in the higher education landscape by setting priorities and steps for action for policyholders and institutions of higher learning.

Lumina’s completion goal is called Goal 2025, and this goal is that 60% of Americans will have obtained either a high-quality degree or post-secondary certificate by the year 2025. Lumina published this goal in 2009 along with their first strategic plan on how to work to reach Goal 2025 (Lumina Foundation for Education, 2013). In 2013 they released an updated strategic plan given the multitude of changes that had occurred in higher education since 2009.

**U.S. Department of Education**

The U.S. Department of Education’s role is to help focus attention on national educational issues, such as the college completion agenda. It also collects state data on schools and disseminates research. In order to support the states that choose to support the college completion agenda, the U.S. Department of Education created a college completion toolkit that outlined seven strategies for governors to consider for implementation. For each strategy the toolkit gives rationale of why it is recommended and then how it can be implemented. These seven strategies outlined by the U.S. Department of Education (2011):

1. Set college completion goals; develop an action plan.
2. Embrace performance-based funding.
3. Align high school standards with college entrance and placement standards.
4. Make it easier for students to transfer.
5. Use data to drive decision-making.
6. Accelerate learning and reduce costs.
7. Target adults, especially those with “some college, but no degree.”

These strategies are low-cost improvements that can be made to policy and educational structure that would have an impact on college completion rates. They also echo strategies that have been outlined by College Board, Complete College America, and the Lumina Foundation. The U.S. Department of Education provides research and support in order to help facilitate the acceleration and expansion of state-led completion efforts (U.S. Department of Education, 2011).

**Postbaccalaureate Reverse Transfers in Community Colleges**

Community college missions in the United States shifted over time through the various educational acts and the numbers of students enrolling. The community college mission changed from a smaller scope, which is to serve as a place to earn transfer degrees and sort out students prepared to transfer on to earn a baccalaureate degree; to a larger scope of meeting the needs of the surrounding community by providing greater access to any person that wanted to pursue additional education beyond high school (Handel, 2013). The emergence of reverse transfer students of all types further stretched the mission of comprehensive community colleges and the idea of access; the notion that a community college was a “second chance institution” emerged.
A further expanded mission

The notion that a community college may be a “second chance” institution refers to the students who enroll after performing poorly academically in high school, were no longer attending school after several years, or were needing to improve a GPA in order to return to a four-year institution. The latter two refer to URTS populations, and the community college may provide a second opportunity both to complete a degree and continue to move on towards a bachelor’s degree. It was Heinze and Daniels (1970) who consistently referred to community colleges as “salvage” or second chance institutions when referring to the prevalence of URTS.

The presence of PRTS at community colleges gives a different meaning to idea of a “second chance” institution (Quinley & Quinley, 1999; Townsend, 2000; Townsend & Dever, 1999). PRTS have already proven themselves to be successful academically, which is opposite of the original idea of a second chance for URTS to succeed in earning a credential. PRTS may also already have seen success in their first career fields. Instead, PRTS have a second chance at starting a new career or gaining new knowledge or skills. The purpose may be for changing career fields to increase earning potential, to update skills in a current career, to fulfill a life goal or dream that differs from the first field of study or work, or to continue to expand knowledge under the concept of life-long learning (Quinley & Quinley, 1999; Townsend, 2009).

The mission of access would allow for the enrollment of PRTS at community colleges. However, there is concern that PRTS may create issues at community colleges, and there are suggestions that they should not be allowed to enroll. One concern is that PRTS will take spots above students without a degree in programs that are more selective or have
enrollment limits. The argument is that PRTS take away a first chance for gainful employment through education by using their second chance, and that PRTS are looked at more favorably by community colleges (Townsend, 2000). A fear is that enrollment of PRTS may lead community colleges away from their mission of access to all.

The concept that community colleges are “second chance” institutions now has a double meaning. Both meanings expand the mission and the idea of access for community colleges nationwide, and further research on PRTS will allow for greater understanding of the impact this will have on two-year institutions. Most of the literature focuses on PRTS who are currently enrolled at institutions, and the completion or success of PRTS has not been adequately studied or measured. The meaning of success for PRTS would also need to be further defined, as what success actually means varies greatly by student and institution. The completion and success of PRTS is outside of the scope for this study due to the focus on currently enrolled students at a community college, but is an important subject for consideration.

Both Leigh (2009), and Friedel and Friesleben (2016) revealed a prevalence of PRTS enrolled at Iowa community colleges, and both studies recommended further research regarding this student population. The two studies were both exploratory in nature, and determining the motivations and expanded demographic information about the population could assist community college in serving their needs, and potentially recruiting them to help alleviate the enrollment decline.

Townsend published numerous studies regarding PRTS, and since her passing in 2009, the amount of research completed and published on this subject has been limited. The body of research for PRTS is not all that expansive, and to this day the research only includes
students who have earned at least a bachelor’s degree or higher. The 2016 study by Friedel and Friesleben included data regarding postassociate students for the first time. Literature regarding the lateral transfer of non-completer community college students is available, but no studies were found regarding the enrollment of students who had already earned an associate’s degree. The addition of postassociate degree earners to a more in-depth look at PRTS in Iowa would provide the first research regarding this population.

**Human Capital Theory**

Human capital theory is the idea that both individuals and society collect economic benefits from investments in people (Sweetland, 1996). Human capital can be defined as the training and skill a person attains, and that the training received can either be formal—through education—or informal—through work experience (Mincer, 1958). The literature also states that education is constant as a prime form of investment that is a part of human capital theory (Schultz, 1971). The kinds of education, and the benefits earned through that education are many. It was previously stated that education may be formal or informal, but the benefits can be tangible, such as an increase in salary or wage, or intangible, such as an increase in personal satisfaction or quality of life (Becker, 1993).

The origin and development of human capital theory is detailed at length by Sweetland (1996). Sweetland shared information reported by Mark Blaug that the field of human capital theory officially began in 1960. The two main reasons why human capital theory was established in the 1960s is due to observations that economic growth in the United States at the time couldn’t be accounted for with traditional economic means of measurement, and that increased levels of education were associated with increases in personal income growth (Sweetland, 1996). Human capital theory—along with the broader
concept of economics of education—were already prevalent in literature. There were over 2,000 journal articles, books, and research studies that focused on these two topics by the mid-1970s (Blaug, 1978).

Sweetland (1966) indicated that the importance of human capital theory is not only evident by its presence in literature, but that “a research agenda including human capital theory applications may prove essential to supporting the education policy process” (p. 342). Sweetland continued, discussing how human capital theory as an analytical framework can use the multiple economic approaches of benefits to society as a means to inform and support education policy.

Benson (1968) asserted that human capital theory has a primary assumption: that education—or formal training—improves work skills or the capacity for the worker to be more productive. Schultz (1971) similarly posited that it is appropriate to assume that education increases or improves the economic capabilities of people, echoing Mincer (1958), who wrote over 20 years earlier “as more skill and experience are acquired with the passage of time, earnings rise” (p. 287). The literature consistently affirms the underlying assumption that human capital theory uses education as an investment, and that education is affiliated with an increase in economic capital—both earnings and personal satisfaction.

Human capital theory has also posited that society will benefit from an investment in (the education of) people. Sweetland (1996) noted that the “…pursuit of education leads to individual and national economic growth … and that human capital theory provides a powerful rationale that favors increased educational support” (p. 356). The idea is that as education and wages increase, buying power will increase, allowing people to invest more in the economy, thereby giving both local and national economies a boost. From a public
education standpoint where the taxpayer partially pays for the education of others, human capital theory would show that the investment is worthwhile, as the investment in others’ education will in turn benefit all of society and not just the individual gaining the educational and economic benefits.

Summary

This chapter provided a review of the literature that informed this study. The researcher summarized literature on the following aspects: (a) traditional transfer students; (b) types of reverse transfer students; (c) community college history and mission; (d) skills gap and completion agenda; and (e) postbaccalaureate reverse transfers in community colleges. A map of the literature review is illustrated in Figure 2.1. A review of the theoretical framework was also provided. This research study will add to the body of research by providing more information on the PRTS in Iowa and by expanding the definition of PRTS to include postassociate degree earners.

The next chapter provides a discussion of the methodology used for this study. Specifically, Chapter 3 focuses on research questions, research design, variables, methods, ethical issues, and limitation of the study.
CHAPTER 3. METHODOLOGY

Overview

This purpose of this study is to understand the motivations behind the enrollment of students at an large, public, community college in the Midwest that have already earned an associate's degree or higher. The study focused on educational and career history and goals for the students at the specific institution. The study aimed to: (a) explore demographic differences among postbaccalaureate, postassociate, and non-degree students, (b) examine if there are statistically significant differences between postbaccalaureate and postassociate degree students, and (c) investigate what factors are statistically significant to PRTS when making a decision to enroll at a community college. This chapter will explore the study’s methodology in the following seven sections: (a) research questions, (b) hypothesis, (c) research design, (d) variables in the study, (e) data analysis, (f) limitations, and (g) ethical issues.

Research Questions

The following questions were used to frame the study, and guide the researcher in the collection and analysis of data:

2. What are the characteristics of postbaccalaureate reverse transfer students at a large, public, community college in the Midwest?

2. Are there statistically significant motivational differences among postbaccalaureate, postassociate, and non-degree students enrolled at a large, public, community college in the Midwest?

3a. Is there an association between gender and previous degree type students enrolled at a large, public, community college in the Midwest?
3b. Is there an association between race/ethnicity and previous degree type students enrolled at a large, public, community college in the Midwest?

3c. Is there an association between marital status and previous degree type students enrolled at a large, public, community college in the Midwest?

3d. Is there an association between degree aspiration and previous degree type students enrolled at a large, public, community college in the Midwest?

3e. Is there an association between major change and previous degree type students enrolled at a large, public, community college in the Midwest?

4a. Can previous degree earned be predicted by demographic (age, gender, ethnicity, marital status, dependents) and motivational enrollment factors?

4b. Can previous degree type be predicted by demographic (age, gender, ethnicity, marital status, dependents) and motivational enrollment factors?

**Hypotheses**

A hypothesis statement was created for each research question with the exception of question one, as the research needed is descriptive in nature. The hypothesis for each of the other questions was stated in a null hypothesis form.

RQ 2: Are there statistically significant motivational differences among postbaccalaureate, postassociate, and non-degree students enrolled at a large, public, community college in the Midwest?

H1: There are no statistically significant motivational differences among postbaccalaureate, postassociate, and non-degree students enrolled at a large, public, community college in the Midwest.
RQ 3a: Is there an association between gender and previous degree type students enrolled at a large, public, community college in the Midwest?

H2: There is no association between gender and previous degree type students enrolled at a large, public, community college in the Midwest.

RQ 3b: Is there an association between race/ethnicity and previous degree type students enrolled at a large, public, community college in the Midwest?

H3: There is no association between race/ethnicity and previous degree type students enrolled at a large, public, community college in the Midwest.

RQ 3c: Is there an association between marital status and previous degree type students enrolled at a large, public, community college in the Midwest?

H4: There is no association between marital status and previous degree type students enrolled at a large, public, community college in the Midwest.

RQ 3d: Is there an association between degree aspiration and previous degree type students enrolled at a large, public, community college in the Midwest?

H5: There is no association between degree aspiration and previous degree type students enrolled at a large, public, community college in the Midwest.

RQ 3e: Is there an association between major change and previous degree type students enrolled at a large, public, community college in the Midwest?

H6: There is no association between major change and previous degree type students enrolled at a large, public, community college in the Midwest.

RQ 4a: Can previous degree earned be predicted by demographic (age, gender, ethnicity, marital status, dependents) and motivational enrollment factors?
H7: Previous degree earned cannot be predicted by demographic (age, gender, ethnicity, marital status, dependents) and motivational enrollment factors.

RQ 4b: Can previous degree type be predicted by demographic (age, gender, ethnicity, marital status, dependents) and motivational enrollment factors?

H8: Previous degree type cannot be predicted by demographic (age, gender, ethnicity, marital status, dependents) and motivational enrollment factors.

**Research Design**

**Survey instrument**

This study utilized the Postbaccalaureate Reverse Transfer (PRT) Survey as the instrument to identify and measure characteristics and motivational factors for postbaccalaureate reverse transfer students that enrolled at a large, public community college in the Midwest. The current researcher developed the survey for the purpose of the research study. The survey was created based on data from previous studies and utilized similar questions retrieved from tested questionnaires. Scholars and professionals familiar with community college issues also reviewed the survey instrument, and a pilot study was completed. The online survey was used to gather information about the participants as well as their motivations with and without previous degrees at the community college. The PRT survey was comprised of four sections: educational information, employment background, future employment plans, and demographics. The motivational factors included in the educational information section were based upon factors mentioned consistently in the literature. A copy of the survey is provided in Appendix A.
Pilot study

A small pilot study was conducted in spring 2017 prior to the completion of the survey in fall 2017. The pilot survey was disseminated to ten participants from various backgrounds in order to review content, language, intent, and survey flow. The survey was modified based on feedback from the pilot participants. Specific wording of some questions were modified, and survey flow was updated to promote future survey completion.

Population and sample

The PRT survey was designed for community college students. Due to the purpose of the study, participants were limited to non-high school students above the age of 18 that were enrolled in credit-bearing courses for the fall 2017 semester. A question asking if a participant was over the age of 18 or not was added to the survey to filter out any minor students that might have gotten included in the survey invitation.

The survey invitation with the active link was emailed to 7,945 students enrolled at the large, Midwest public community college, and 1,308 students responded to the survey. As shown in Table 3.1, the overall response rate for the PRT survey was 16.5%. Within the entire population, 227 students were identified as postbaccalaureate reverse transfer students (PRTS), or 17.4% of the respondents. Students that answered, “Yes” to survey question #4 “Have you earned a previous degree?” were identified as a part of the PRTS group. The PRTS group was further divided into smaller groups by answering question #6 “What is the highest degree you have earned?” 101 students answered, “Associate’s”, and were labeled “postassociate”, and 84 students that answered either “Bachelor’s” or “Master’s”, were combined and labeled “postbaccalaureate.” There were no responses for “Doctoral” or “Terminal.” PRTS was divided into the two subgroups of postassociate and postbaccalaureate for future comparative purposes.
Table 3.1. PRT survey population and student sample numbers

<table>
<thead>
<tr>
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<th>n</th>
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</thead>
<tbody>
<tr>
<td>Population total</td>
<td>7,945</td>
</tr>
<tr>
<td>Sample size</td>
<td>1,308</td>
</tr>
<tr>
<td>Previous degree—no</td>
<td>1,081*</td>
</tr>
<tr>
<td>Previous degree—yes</td>
<td></td>
</tr>
<tr>
<td>Associate’s</td>
<td>101*</td>
</tr>
<tr>
<td>Bachelor’s or higher</td>
<td>84*</td>
</tr>
</tbody>
</table>

*n=students who responded to survey questions 4 and 6.

Data collection

Data collection was managed in the following manner. The Office of Institutional Research at the community college classifies email addresses as protected under the Federal Education Rights to Privacy Act (FERPA) and therefore was not able to send a list of student names and email addresses to the primary researcher. In order to avoid a FERPA violation, an invitation to participate in the survey was drafted to include a generic link to the survey instrument along with language regarding consent to participate in the study. The researcher sent the invitation to be sent via email along with specific population parameters to the Office of Institutional Research at the community college. The Office of Institutional Research emailed the survey out on behalf of the researcher from the researcher’s email address. All potential participants were notified they must be at least 18 years of age to participate, and that their responses to the survey would be kept confidential. The responses to the data came in with unique numeric identifiers, and the researcher did not have any knowledge of personal information of participants. The survey was kept active for 6 weeks. Reminder emails with the same language as the initial invitation was sent after the 2 and 4-week marks in order to facilitate an increase in responses. After completion of the survey, all responses were recorded by the Qualtrics system. To increase the response rate, a random
drawing for winning one of five Visa gift cards valued at $10 was promoted via the invitation and reminder emails. All participants that completed the survey were redirected to a form in order to have the chance to enter to win one of the gift cards. Completion of the entry form was voluntary. See appendix B for details of the invitation email.

A cleaning process of the data took place after the PRT survey was deactivated. The survey data was downloaded from the Qualtrics system into IBM SPSS statistical software. The data was reviewed for any non-responders, and each participant in the data had finished the survey. Due to skip-logic present in the survey, and participants having the ability to opt out of responding to questions, not all questions had a 100% response rate. The response rate for all participants and the various subgroups was calculated after the initial review of the raw data. The data was then used to conduct descriptive, logistic regression, nonparametric ANOVA, and comparative analysis.

Variables

Both dependent and independent variables for the study are listed as follows. Some of the variables fall under both categories depending on the statistical analysis performed. For example, degree type is a dependent variable for Binomial Logistic Regression, but is an independent variable for the analysis of variance test. Each variable is described individually.

Dependent

Six dependent variables were used to gather data:

Degree aspiration: Participants’ intended goals were measured by two questions. Question 14 first asked if the participant attended to earn an associate’s degree. If the answer was no, the respondent was directed to question 15 that asked about other educational aspirations
ranging from earning a certificate to transfer preparation. A new variable called *degree aspiration* was created by combining questions and 14 and 15 into those that did intend to earn an associate’s degree, and those that did not. Degree aspiration is thus defined as whether or not a participant wanted to complete an associate’s degree.

**Demographics:** A group of seven variables collected demographic characteristics for the participants. These variables measured students’ gender, age, resident status, race/ethnicity, marital status, dependent children, and distance from campus. The demographic characteristics were measured through questions #25 through #32.

**Enrollment factors:** *Enrollment factors* was measured by question 13, which asked respondents to rank factors that had an influence on their decision to enroll at a community college. There are 9 factors that were measured by a 5-point Likert scale in which 1 equals not at all important, and 5 equals extremely important. The 9 factors are: (a) learn new skills, (b) currently unemployed, (c) currently underemployed, (d) advancement in my current field of employment, (e) unsatisfied with current employment, (f) personal growth and interests, (g) prepare for license or exam, (h) prepare for transfer to a four-year institution, and (i) earn more money.

**Major change:** All participants were asked to identify their current program of study, and students that had earned a previous degree were asked to identify their previous program of study. A new variable was created to determine if there was a difference between the current and previous programs for participants. This new variable is called major change and shows if participants had a difference in programs of study between their first degree and second enrollment.
**Previous degree:** Previous degree was measured by Question 4 in the survey: “Have you earned a previous degree?” Participants that answered yes were then directed to answer further questions regarding their previous education. No responses to the question were recoded to a new variable *nodegree*.

**Degree type.** Degree type only includes participants that answered yes to Question 4. Degree type was measured by Question 6: “What is the highest degree you have earned?” Question 6 originally had five possible degree levels as responses, but due to few or no respondents for any degree past a master’s degree, the question was recoded to Associate (AA, AS, AAS, AGS) = 0 and Bachelor’s degree or higher (BA, BS, MA, MS) = 1. There were only a few that responded with a master’s degree response, which is why they were combined with bachelor’s degree responses.

**Independent**

Four independent variables were used to gather data:

**Degree new:** This variable was created by combining the variables *nodegree* (students that had not earned a previous degree), and *degree type* (students that had either earned an associate’s degree or a bachelor’s degree or higher). After computing the new variable, the scale for *degree new* was nodegree=0, associate’s degree=1, and bachelor’s degree or higher=2.

**Demographics:** Demographics include students’ gender, age, resident status, race/ethnicity, marital status, dependent children, and distance from campus.

**Degree aspirations:** This shows whether participants intend to earn an associate’s degree.

**Enrollment factors:** These indicate the importance of factors that led different participants to enroll.
Degree type: This variable represents students that previously earned either an associate’s degree or a bachelor’s degree or higher.

Data Analysis

This study utilized a quantitative research approach to answer the research questions. The data analysis included various statistical techniques such as descriptive analysis, binomial logistic regression, analysis of variance, and comparative analysis. The statistical software IBM SPSS 22.0 was used to conduct descriptive, regression, analysis of variance, and comparative analysis.

Descriptive

Descriptive analysis was used to address the first research question. Participants were divided into three groups for analysis of demographic characteristics: (a) no previous degree, (b) previous associate’s degree, and (c) previous bachelor’s degree or higher. Frequencies were utilized to describe the various participant groups individually, and to provide a comparison among the three groups.

Analysis of variance

Analysis of variance allows for comparison of three or more categories to determine if there are any differences among the categories, and if those differences are significant. In order to investigate the second research question, an analysis of variance was necessary in order to determine differences among participants that fall into the three categories of no degree, postassociate, and postbaccalaureate.

One-way ANOVA

One-way analysis of variance (ANOVA) allows for one dependent variable, and has three assumptions or requirements that need to be tested to determine if the one-way
ANOVA is appropriate to use for statistical analysis of the data (Mertler & Vannatta, 2013). The three assumptions that were tested were normality, equal variance, and outliers.

**Normality.** The assumption of normality for ANOVA was tested first through the explore model for skewness and kurtosis. Skewness is when the distribution of scores has a high number of scores clustered at one end of the distribution, with very few scores spread out the other direction, creating a tail. Kurtosis is the shape of a distribution of scores in terms of its flatness or peakedness (Urdan, 2010). Motivational differences were not normally distributed for non-degree students with a skewness of -1.076 (SE .084) and kurtosis of 0.961 (SE 0.168); for postassociate students with a skewness of -1.422 (SE 0.261) and kurtosis of 1.910 (SE 0.517); and for postbaccalaureate students with a skewness of -1.540 (SE 0.260) and kurtosis of 1.843 (SE 0.514). Next, the Shapiro-Wilk’s test of normality was run to confirm the results of the skewness and kurtosis analysis. Motivational differences were not normally distributed for non-degree, postassociate, and postbaccalaureate students, as assessed by Shapiro-Wilk’s test ($p<.05$). Both tests of normality show that the distribution is not normal; therefore the test of normality has been violated for a one-way ANOVA.

**Equal variance.** The one-way ANOVA assumes that the population variances of the dependent variable are equal for all groups of the independent variable. If the variances are unequal, this can affect the Type I error rate. The assumption of homogeneity of variances was tested using Levene's test of equality of variances for non-degree, postassociate, and postbaccalaureate students. It was determined that the assumption of homogeneity of variances was violated, as assessed by Levene's test for equality of variances ($p<.05$).
Outliers. A visual test using boxplots was used to determine if there were any outliers in the data. There is an assumption that the data have no outliers in order to successfully run a one-way ANOVA. It was observed that there were several outliers in the data, as assessed by inspection of a boxplot for values greater than 1.5 box-lengths from the edge of the box. Therefore, the test of outliers has been violated for a one-way ANOVA.

Three major assumptions (normality, equal variance, outliers) for a one-way ANOVA have all been violated by the dataset. Therefore, for the purpose of this study, a one-way analysis of variance was not an appropriate statistical method for determining if there are statistically significant motivational factors for non-degree, postassociate, and postbaccalaureate students. An alternative to the one-way ANOVA was explored as a statistical method appropriate for this study.

Nonparametric analysis of variance. A nonparametric analysis of variance can be substituted for ANOVA for the comparison of two or more groups when there is a lack of equal variance. The specific nonparametric test used for comparison is the Kruskal-Wallis H test. There are three basic assumptions that first need to be met: (a) the dependent variable must be continuous or ordinal, (b) the independent variable needs to have three or more categorical groups, and (c) there is an independence of observations (McKight & Najab, 2010). The dependent variables used in this study for Kruskal-Wallis were the enrollment factors asked in question 13. The independent variable has the three groups’ non-degree, postassociate, and postbaccalaureate. Both the dependent and independent variables meet assumptions one and two. There is an independence of observations as participants can only be members of one group included in the independent variable, and provided a single ranking for each motivational enrollment factor.
The Kruskal-Wallis test also has a fourth assumption that needs to be tested through SPSS software. This fourth assumption is based on whether the distribution of scores for each group of the independent variable (non-degree, postassociate, postbaccalaureate) has either different or the same shape, otherwise known as variability. If the distributions have the same shape, the Kruskal-Wallis test can be used to determine the differences among the medians of the groups, whereas if the distributions have a different shape, the test can be used to determine the difference among the distributions of the group.

In order to determine whether or not the distribution of scores has a same or different shape, the Kruskal-Wallis test called new procedure was completed. For the test, only the motivational variable currently unemployed was used for the dependent variable, and degree_new (non-degree, postassociate, postbaccalaureate) was used for the independent variable. First, an independent samples Kruskal-Wallis test was run, and then an analysis of means. Distributions of currently unemployed scores were similar for all groups, as assessed by visual inspection of a boxplot. Therefore, the fourth assumption that the distribution of scores for each group of the independent variable has the same variability has been met. The data will be able to be analyzed using a comparison of the medians between the groups.

The Kruskal-Wallis test determines if there are statistically significant differences between the medians of two or more groups, however, it does not show which groups have a statistically significant difference. For dependent variables where there is a statistically significant difference, the Dunn’s (1964) post hoc test will be run to determine for which groups the difference is significant. Figure 3.1 provides a diagram of the test.
Chi-square analysis

Chi-square analysis was used for research question 3a - e to determine if there are any statistically significant associations between previous degree type and gender, race/ethnicity, marital status, degree aspiration, and major change. Chi-square was used for comparison, as degree type. The variable samples—postassociate and postbaccalaureate—are known to be independent as participants were only allowed to select one answer for questions 6 on the survey that asked “what is the highest degree you have earned?” The participants included in categorical dependent variables, and was used to compare differences for gender, race/ethnicity, marital status, degree aspiration, and major change.

Figure 3.1. Kruskal-Wallis H test with Dunn’s (1964) procedure
Binomial Logistic regression

Questions 4a and 4b were addressed by conducting a binary logistic regression. Two versions of the logistic regression were conducted in order to determine if any of the demographic characteristics or enrollment factors predicted participation in one of two comparison groups. This is due to the fact that logistic regression requires a dichotomous dependent variable. The first group was between students without a previous degree and students with a previous degree. The second group only included students that had earned a previous degree, and were divided into postassociate and postbaccalaureate students. Each regression analysis looked at the following predictive factors to determine group predictability: age, gender, race/ethnicity, marital status, number of dependents, degree aspiration, and motivational factors. The independent variable change major was only used for the second logistic regression since students without a previous degree would not have had a previous degree to allow for a comparison of change of program of study.

Limitations

Quantitative analysis was applied in this study to understand the motivations behind the enrollment of students at an large, public, community college in the Midwest that have already earned an associate's degree or higher. There were three main limitations of this study. First, the postbaccalaureate reverse transfer student survey data were comprised of self-reported information. Participants were asked to self-identify if they had earned a previous degree, and how important certain factors were that led to enrollment at their current institution.

Second, due to limited responses of some demographic characteristics, some analysis could only be completed by recoding answers with multiple responses to a binary response in
order to protect participants and provide valid statistical analysis. For example, race and ethnicity was recoded to white and non-white due to the small cell size for several of the other categorical choices.

Third, since the survey was disseminated to one community college, the specific data results may not be generalizable outside of the Midwest, or this particular institution. The study will still provide a context for similar studies at other institutions, or for a nationwide study of this particular population.

**Ethical Considerations**

Since the study involved the participation of human subjects, the Application for the Approval of Research Involving Humans was submitted to the Iowa State University Institutional Review Board (IRB), and approved on April 25, 2017. A second approval application was submitted to the participating community college’s Institutional Review Board, and was approved on July 18, 2017. A copy of the IRB approval for Iowa State University is provided in Appendix C. A copy of the IRB approval for the participating community college is in possession of the researcher in order to protect the privacy of the institution and its students.

The community college’s IRB office disseminated the survey instrument to its students on behalf of the researcher as email addresses are protected by FERPA. Survey responses were assigned a random response number, and no identifying information was tied to survey responses. The researcher was not ever in possession of a contact list of the community college’s students, so no ethical issue could arise due to the nature of the survey dissemination.
The researcher provided Visa gift cards as an incentive to complete the survey in order to promote a higher response rate. After completion of the initial survey, participants were routed to a second voluntary form in order to input contact information for a chance to enter a random drawing for winning one of the five Visa gift cards valued at $50. There were no consequences for not completing the survey.

Summary

The purpose of this study was to understand the motivations behind the enrollment of students at a large, public, community college in the Midwest that have already earned an associate's degree or higher. The study focused on educational and career history and goals for the students at the specific institution. The study aimed to: (a) explore demographic differences among postbaccalaureate, postassociate, and non-degree students; (b) examine if there are statistically significant differences between postbaccalaureate and postassociate degree students; and (c) investigate what factors are statistically significant to PRTS when making a decision to enroll at a community college.

This chapter addressed the study’s methodology regarding the following seven sections: (a) research questions; (b) hypothesis; (c) research design; (d) variables in the study; (e) data analysis; (f) limitations; and (g) ethical issues. In the next chapter, a complete report of the findings will be presented. The researcher will present findings generated from descriptive analysis, logistic regression, nonparametric ANOVA, and comparative analysis.
CHAPTER 4. RESULTS

Overview

This chapter displays the detailed results of this study through tables, figures, and narratives. First, results from descriptive analysis focused on demographic characteristics and degree aspirations are presented to address the first research question. The descriptive analysis was conducted for the following three subgroups of the overall population: (a) students without a previous degree (non-degree); (b) students with a previous associate’s degree (postassociate); and (c) students with a previous bachelor’s degree or higher (postbaccalaureate). Second, analysis of variance results were completed to answer the second research question. The results provided findings to show any motivational differences to enrollment among non-degree, postassociate, and postbaccalaureate student groups. Third, Chi-square analysis results focused on postassociate and postbaccalaureate students and potential associations between those two student populations with gender, race/ethnicity, marital status, degree aspirations, and major change to determine if any association exists. Last, the results of a binomial logistic regression addressed research questions 4a and 4b. The logistic regression looked at predictive factors for the two groups: previous degree earned and previous degree type.

Research Question 1

1. *What are the characteristics of postbaccalaureate reverse transfer students at a large, public, community college in the Midwest?*

A descriptive analysis was completed in order to answer research question one. The analysis describes the characteristics of the three population subgroups: (a) non-degree, (b) postassociate, and (c) postbaccalaureate. Table 4.1 presents the frequency and percentage of
Table 4.1. Descriptive analysis frequencies for non-degree, postassociate, and postbaccalaureate students at a large, Midwest-community college—frequency

<table>
<thead>
<tr>
<th>Variables</th>
<th>Non-degree (n=1054)</th>
<th>Postassociate (n=101)</th>
<th>Post-baccalaureate (n=93)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>Gender</td>
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</tr>
<tr>
<td>Male</td>
<td>260</td>
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<td>30</td>
</tr>
<tr>
<td>Female</td>
<td>652</td>
<td>61.9</td>
<td>63</td>
</tr>
<tr>
<td>Missing (non response)</td>
<td>142</td>
<td>13.5</td>
<td>8</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-24</td>
<td>644</td>
<td>61.1</td>
<td>28</td>
</tr>
<tr>
<td>25-39</td>
<td>179</td>
<td>17.0</td>
<td>34</td>
</tr>
<tr>
<td>≥40</td>
<td>93</td>
<td>8.8</td>
<td>31</td>
</tr>
<tr>
<td>24.5 (average)</td>
<td>916</td>
<td>86.9</td>
<td></td>
</tr>
<tr>
<td>33.75 (average)</td>
<td></td>
<td></td>
<td>93</td>
</tr>
<tr>
<td>34.4 (average)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Missing (non response)</td>
<td>138</td>
<td>13.1</td>
<td>8</td>
</tr>
<tr>
<td>Race/ethnicity</td>
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<td></td>
</tr>
<tr>
<td>Hispanic/Latinx</td>
<td>64</td>
<td>6.1</td>
<td>3</td>
</tr>
<tr>
<td>American Indian or Alaska Native</td>
<td>5</td>
<td>0.5</td>
<td>2</td>
</tr>
<tr>
<td>Asian</td>
<td>18</td>
<td>1.7</td>
<td>1</td>
</tr>
<tr>
<td>Black or African American</td>
<td>95</td>
<td>9.0</td>
<td>8</td>
</tr>
<tr>
<td>Native Hawaiian or other Pacific Islander</td>
<td>3</td>
<td>0.3</td>
<td>0</td>
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<tr>
<td>White</td>
<td>702</td>
<td>66.6</td>
<td>76</td>
</tr>
<tr>
<td>Two or more races</td>
<td>28</td>
<td>2.7</td>
<td>2</td>
</tr>
<tr>
<td>Race/ethnicity unknown</td>
<td>4</td>
<td>0.4</td>
<td>0</td>
</tr>
<tr>
<td>Non-white (all other ethnicities combined)</td>
<td>217</td>
<td>20.6</td>
<td>16</td>
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<tr>
<td>Missing (non response)</td>
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<td>12.8</td>
<td>9</td>
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<tr>
<td>Marital Status</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>No longer married</td>
<td>46</td>
<td>4.4</td>
<td>12</td>
</tr>
<tr>
<td>Married</td>
<td>154</td>
<td>14.6</td>
<td>32</td>
</tr>
<tr>
<td>Never married</td>
<td>709</td>
<td>67.3</td>
<td>47</td>
</tr>
<tr>
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<td>145</td>
<td>13.8</td>
<td>10</td>
</tr>
<tr>
<td>Dependents</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>629</td>
<td>59.7</td>
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</tr>
<tr>
<td>2</td>
<td>81</td>
<td>7.7</td>
<td>7</td>
</tr>
<tr>
<td>3</td>
<td>111</td>
<td>10.5</td>
<td>20</td>
</tr>
<tr>
<td>4</td>
<td>43</td>
<td>4.1</td>
<td>7</td>
</tr>
<tr>
<td>5</td>
<td>19</td>
<td>1.8</td>
<td>1</td>
</tr>
<tr>
<td>6 or more</td>
<td>15</td>
<td>1.5</td>
<td>4</td>
</tr>
<tr>
<td>Missing (non response)</td>
<td>156</td>
<td>14.8</td>
<td>8</td>
</tr>
<tr>
<td>Degree Aspirations</td>
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<td></td>
<td></td>
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<tr>
<td>Not AA</td>
<td>88</td>
<td>8.3</td>
<td>11</td>
</tr>
<tr>
<td>AA</td>
<td>845</td>
<td>80.2</td>
<td>81</td>
</tr>
<tr>
<td>Missing (non response)</td>
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<td>11.5</td>
<td>9</td>
</tr>
<tr>
<td>Major Change</td>
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<td>28.7</td>
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<tr>
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<td>54.5</td>
<td>70</td>
</tr>
<tr>
<td>Missing (non response)</td>
<td>17</td>
<td>16.8</td>
<td>9</td>
</tr>
</tbody>
</table>
the demographic (gender, age, race/ethnicity, marital status, and dependents), degree aspirations, and major change variables involved in this analysis.

As shown in Table 4.1, there were more females than males in the entire sample for all three categories. Females represented 61.9% of Non-degree, 62.4% of postassociate, and 81.7% of postbaccalaureate. Age was reported by range and average. The largest age group range differed among the categories. The largest age group for students without a degree was 18-24, where the largest age group for both postassociate and postbaccalaureate students was 25-39. The average age for each category was 24.5 for non-degree, 33.75 for postassociate, and 34.4 for postbaccalaureate. There is a large gap in the average age between non-degree and the other two categories, but the average age for postbaccalaureate students is only slightly higher than that of postassociate students.

The largest represented race group for all three student categories was white (66.6%, 75.2%, and 76.3%). The second and third largest race groups for both non-degree and postassociate students were Black or African American (9.0% and 7.9%) and Hispanic/Latinx (6.1% and 3%) respectively. The second largest race group for postbaccalaureate was also Black or African American (7.5%). However, the third largest race group for postbaccalaureate was Asian (4.3%) and Hispanic/Latinx (3.2%) was just slightly behind as the fourth largest group.

The question for marital status had been recoded to combine the responses “widowed”, “separated”, and “divorced”, into one category titled “no longer married” due to the small cell size and to improve comparative information. The majority of respondents for each student category indicated they had never been married before. Non-degree students had the largest percentage of students that had never been married, where postbaccalaureate...
had the same percentage of students that were either married (38.7%) or never married (38.7%). The smallest percentage for all three student groups was no longer married, even after combining responses through recoding.

The survey allowed for participants to indicate the number of dependents up to ten or more. Due to small cell size, the data was recoded to combine responses for six dependents through ten or more dependents to the new reported response of six or more. The majority of respondents indicated they had one dependent (59.7%, 53.5%, 63.4%). No postbaccalaureate students had more than five dependents, with the majority of this group indicating they had one to three dependents (89.3%). In contrast, 4.0% of postassociate students and 1.5% of non-degree students have 6 or more dependents. These two student categories tended to have higher numbers of dependents than postbaccalaureate students.

Beyond general demographic information, the descriptive analysis also depicted participants’ degree aspiration and change of program of study. The question regarding degree aspiration asked if the students planned to obtain an associate’s degree at the community college they were attending. Earning an associate’s degree was the primary degree aspiration for the majority of non-degree (80.2%) and postassociate (80.2%) students. More postbaccalaureate students indicated they intended to earn an associate’s degree (67.7%) than not (28%), but this is quite a bit less than the non-degree and postassociate students indicated. Major change was not applicable to non-degree students, as they did not earn a previous degree with which to compare programs of study. All participants that indicated they had earned a previous degree were asked to indicate both their previous and current programs of study. A new variable, major change, was created to indicate if there was a difference between the previous and current programs of study. Students with the
same programs of study are indicated by no change and represent 28.7% of postassociate and 15.1% of postbaccalaureate participants. Students with a difference between the programs of study are indicated by change and represent 54.5% of postassociate and 75.3% of postbaccalaureate participants. Just over half of postassociate students were pursuing a different program of study, where ¾ of postbaccalaureate students had chosen to pursue a new program of study.

**Research Question 2**

2. *Are there statistically significant motivational differences among postbaccalaureate, postassociate, and non-degree students enrolled at a large, public, community college in the Midwest?*

In order to answer research question two to determine if there is a statistically significant demographic motivational difference among postbaccalaureate, postassociate, and non-degree students, an analysis of variance must be run. An analysis of variance allows for a comparison of more than two groups, which is why it is a more appropriate test than a t-test. The Kruskal-Wallis H test is a rank-based nonparametric analysis of variance used to determine if there are statistically significant differences between groups. It is a nonparametric alternative to the one-way ANOVA when the assumption of equal variances has been violated.

There are four assumptions that need to be met in order to run the Kruskal-Wallis H test. The first assumption is that there is one dependent variable measured at the continuous or ordinal level. Question 13 is the dependent variable, and it is a continuous variable, so the first assumption has been met. The second assumption is that there is one independent variable that consists of two or more categorical, independent groups. The independent variable consists of the following categorical, independent groups: non-degree, postassociate, and postbaccalaureate. The second assumption has therefore been met. The third assumption
is that there is an independence of observations, with no relationship among the three groups. The three groups are independent as each participant is only able to belong to one of the three groups. Respondents indicated if they had a previous degree, and could only select the highest level of previous degree earned. Therefore, the third assumption has been met. The last assumption is based upon whether the distribution of scores for the independent variables has the same or different shape. Boxplots of the data were created via SPSS to observe the distributions of the three groups within the independent variable. Distributions of scores were similar for all groups, as assessed by visual inspection of a boxplot. Therefore the final assumption has been met, and an analysis of medians was completed. Since all four assumptions were met, the Kruskal-Wallis H test was an appropriate statistical method to determine if there were statistically significant differences in motivational factors among non-degree, postassociate, and postbaccalaureate students. A post hoc analysis for statistically significant results was completed using Dunn’s (1964) procedure with a Bonferroni correction in order to provide multiple pairwise comparisons (Mertler & Vannatta, 2013).

**Learn new skills**

A Kruskal-Wallis H test was run to determine if there were differences in the motivational factor *learn new skills* score between three groups of participants with different educational levels: the "non-degree" \((n=923)\), "postassociate"\((n=92)\), and "postbaccalaureate" \((n=89)\) groups. Distributions of *learn new skills* scores were similar for all groups, as assessed by visual inspection of a boxplot. Median *learn new skills* scores were not statistically significantly different between groups, \(H(2)=2.202, p=.333\). Therefore, we accept the null hypothesis that there is no statistically significant difference for the
motivational factor—learn new skills—among non-degree, postassociate, and postbaccalaureate students.

**Currently unemployed**

A Kruskal-Wallis H test was run to determine if there were differences in the motivational factor currently unemployed score between three groups of participants with different educational levels: the "non-degree" (n=908), "postassociate"(n=92), and "postbaccalaureate" (n=87) groups. Distributions of currently unemployed scores were similar for all groups, as assessed by visual inspection of a boxplot. Median currently unemployed scores were statistically significantly different between groups, $H(2)=16.847$, $p<0.001$. Therefore, we reject the null hypothesis that there is no statistically significant difference for the motivational factor—currently unemployed—among non-degree, postassociate, and postbaccalaureate students, and accept the alternative hypothesis that there is a statistically significant difference for the motivational factor—currently unemployed—among non-degree, postassociate, and postbaccalaureate students.

Pairwise comparisons were performed using Dunn's (1964) procedure with a Bonferroni correction for multiple comparisons. Adjusted $p$-values are presented. This post hoc analysis revealed statistically significant differences in currently unemployed scores between the postbaccalaureate (Mdn = 1.00) and non-degree (Mdn = 3.00) ($p<0.001$) groups, but not between the postassociate group (Mdn = 2.00) and any other group combination.

**Currently Underemployed**

A Kruskal-Wallis H test was run to determine if there were differences in the motivational factor currently underemployed score between three groups of participants with different educational levels: the "non-degree" (n=892), "postassociate"(n=92), and
"postbaccalaureate" \((n=88)\) groups. Distributions of currently underemployed scores were similar for all groups, as assessed by visual inspection of a boxplot. Median currently underemployed scores were statistically significantly different between groups, \(H(2)=7.653, p=0.022\). Therefore, we reject the null hypothesis that there is no statistically significant difference for the motivational factor—currently underemployed—among non-degree, postassociate, and postbaccalaureate students, and accept the alternative hypothesis that there is a statistically significant difference for the motivational factor—currently underemployed—among non-degree, postassociate, and postbaccalaureate students.

Pairwise comparisons were performed using Dunn's (1964) procedure with a Bonferroni correction for multiple comparisons. Adjusted \(p\)-values are presented. This post hoc analysis revealed statistically significant differences in currently underemployed scores between the postbaccalaureate (Mdn = 2.00) and non-degree (Mdn = 3.00) \((p=0.019)\) groups, but not between the postassociate group (Mdn = 3.00) and any other group combination.

**Advancement in current field of employment**

A Kruskal-Wallis H test was run to determine if there were differences in the motivational factor advancement in current field of employment score between three groups of participants with different educational levels: the "non-degree" \((n=901)\), "postassociate" \((n=91)\), and "postbaccalaureate" \((n=87)\) groups. Distributions of advancement in current field of employment scores were similar for all groups, as assessed by visual inspection of a boxplot. Median advancement in current field of employment scores were not statistically significantly different between groups, \(H(2)=5.660, p=0.059\). Therefore, we accept the null hypothesis that there is no statistically significant difference for the
motivational factor—*advancement in current field of employment*—among non-degree, postassociate, and postbaccalaureate students.

**Unsatisfied with current employment**

A Kruskal-Wallis H test was run to determine if there were differences in the motivational factor *unsatisfied with current employment* score between three groups of participants with different educational levels: the "non-degree" (*n*=896), "postassociate" (*n*=91), and "postbaccalaureate" (*n*=88) groups. Distributions of *unsatisfied with current employment* scores were similar for all groups, as assessed by visual inspection of a boxplot. Median *unsatisfied with current employment* scores were statistically significantly different between groups, *H*(2)=6.271, *p*=.043. Therefore, we reject the null hypothesis that there is no statistically significant difference for the motivational factor—*unsatisfied with current employment*—among non-degree, postassociate, and postbaccalaureate students, and accept the alternative hypothesis that there is a statistically significant difference for the motivational factor—*unsatisfied with current employment*—among non-degree, postassociate, and postbaccalaureate students.

Pairwise comparisons were performed using Dunn's (1964) procedure with a Bonferroni correction for multiple comparisons. Adjusted *p*-values are presented. This post hoc analysis revealed statistically significant differences in *unsatisfied with current employment* scores between the postassociate (Mdn = 3.00) and non-degree (Mdn = 3.00) (*p*=.037) groups, but not between the postbaccalaureate group (Mdn = 2.00) and any other group combination.
Personal growth and interests

A Kruskal-Wallis H test was run to determine if there were differences in the motivational factor *personal growth and interests* score between three groups of participants with different educational levels: the "non-degree" ($n=915$), "postassociate"($n=92$), and "postbaccalaureate" ($n=89$) groups. Distributions of *personal growth and interests* were similar for all groups, as assessed by visual inspection of a boxplot. Median *personal growth and interests* scores were not statistically significantly different between groups, $H(2)=1.617$, $p=.446$. Therefore, we accept the null hypothesis that there is no statistically significant difference for the motivational factor—*personal growth and interests*—among non-degree, postassociate, and postbaccalaureate students.

Prepare for license or exam

A Kruskal-Wallis H test was run to determine if there were differences in the motivational factor *prepare for license or exam* score between three groups of participants with different educational levels: the "non-degree" ($n=901$), "postassociate"($n=92$), and "postbaccalaureate" ($n=89$) groups. Distributions of *prepare for license or exam* scores were similar for all groups, as assessed by visual inspection of a boxplot. Median *prepare for license or exam* scores were not statistically significantly different between groups, $H(2)=.410$, $p=.815$. Therefore, we accept the null hypothesis that there is no statistically significant difference for the motivational factor—*prepare for license or exam*—among non-degree, postassociate, and postbaccalaureate students.

Prepare for transfer to a four-year institution

A Kruskal-Wallis H test was run to determine if there were differences in the motivational factor *prepare for transfer to a four-year institution* score between three groups
of participants with different educational levels: the "non-degree" \((n=913)\), "postassociate" \((n=92)\), and "postbaccalaureate" \((n=89)\) groups. Distributions of prepare for transfer to a four-year institution scores were similar for all groups, as assessed by visual inspection of a boxplot. Median prepare for transfer to a four-year institution scores were statistically significantly different between groups, \(H(2)=47.559, p<.001\). Therefore, we reject the null hypothesis that there is no statistically significant difference for the motivational factor—prepare for transfer to a four-year institution—among non-degree, postassociate, and postbaccalaureate students, and accept the alternative hypothesis that there is a statistically significant difference for the motivational factor—prepare for transfer to a four-year institution—among non-degree, postassociate, and postbaccalaureate students.

Pairwise comparisons were performed using Dunn's (1964) procedure with a Bonferroni correction for multiple comparisons. Adjusted \(p\)-values are presented. This post hoc analysis revealed statistically significant differences in prepare for transfer to a four-year institution scores between the postbaccalaureate \((\text{Mdn} = 1.00)\) and postassociate \((\text{Mdn} = 3.00)\) \((p = .001)\) and postbaccalaureate and non-degree \((\text{Mdn} = 4.00)\) \((p<.001)\) groups, but not between the postassociate and non-degree groups.

Earnings

A Kruskal-Wallis H test was run to determine if there were differences in the motivational factor earn more money score between three groups of participants with different educational levels: the "non-degree" \((n=917)\), "postassociate"\((n=92)\), and "postbaccalaureate" \((n=89)\) groups. Distributions of earn more money scores were similar for all groups, as assessed by visual inspection of a boxplot. Median earn more money scores were statistically significantly different between groups, \(H(2)=10.089, p=.006\). Therefore,
we reject the null hypothesis that there is no statistically significant difference for the motivational factor—earn more money—among non-degree, postassociate, and postbaccalaureate students, and accept the alternative hypothesis that there is a statistically significant difference for the motivational factor—earn more money—among non-degree, postassociate, and postbaccalaureate students.

Pairwise comparisons were performed using Dunn's (1964) procedure with a Bonferroni correction for multiple comparisons. Adjusted $p$-values are presented. This post hoc analysis revealed statistically significant differences in earn more money scores between the postbaccalaureate (Mdn = 4.00) and postassociate (Mdn = 5.00) ($p = .005$) and postbaccalaureate and non-degree (Mdn = 5.00) ($p = .032$) groups, but not between the postassociate and non-degree groups.

**Research Question 3**

3a. **Is there an association between gender and previous degree type students enrolled at a large, public, community college in the Midwest?**

3b. **Is there an association between race/ethnicity and previous degree type students enrolled at a large, public, community college in the Midwest?**

3c. **Is there an association between marital status and previous degree type students enrolled at a large, public, community college in the Midwest?**

3d. **Is there an association between degree aspiration and previous degree type students enrolled at a large, public, community college in the Midwest?**

3e. **Is there an association between major change and previous degree type students enrolled at a large, public, community college in the Midwest?**

Chi-square test for association has three assumptions that need to be met for it to be the correct statistical model to determine if there are associations between previous degree type, and other variables. First, Chi-square requires that there are two categorical variables. All the variables chosen for comparison are nominal, categorical variables. The second
assumption is that there is an independence of observations exists. For each variable, participants were only able to select one option when completing the survey. There is an independence of observations. The third assumption is that all cells should have expected counts greater than five. A Chi-square test for association was conducted for all five pairs to be tested. All expected cell frequencies were greater than five. All three assumptions for Chi-square analysis have been met. The five tests for associations were run and are described below.

Gender

A Chi-square test for association was conducted between gender and previous degree type (see Table 4.2). All expected cell frequencies were greater than five. There was a statistically significant association between gender and previous degree type, \( \chi^2(1) = 9.832, p = .002 \). There was a moderately strong association between gender and previous degree type, \( \phi = .234 p = .002 \). Therefore, we reject the null hypothesis that there is no association between gender and previous degree type, and accept the alternative hypothesis that there is an association between gender and previous degree type.

Race/Ethnicity

A Chi-square test for association was conducted between race/ethnicity and previous degree type (see Table 4.3). Due to small cell counts, the question regarding race/ethnicity

Table 4.2. Chi-square analysis of previous degree type among males and females

<table>
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<th>Variable</th>
<th>n</th>
<th>Gender</th>
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<th></th>
<th></th>
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</tr>
</thead>
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<tr>
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<td>Females</td>
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<td>139</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

n=180
Table 4.3. Chi-square analysis of previous degree type among white and non-white

<table>
<thead>
<tr>
<th>Variable</th>
<th>Race/Ethnicity</th>
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<th></th>
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</tr>
<tr>
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<td></td>
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<td></td>
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</tbody>
</table>

n=180

was recoded to the dichotomous variable white_nonwhite for comparison. All expected cell frequencies were greater than five. There was not a statistically significant association between race/ethnicity and previous degree type, $\chi^2(1) = .112, p = .738$. There was a not a strong or significant association between gender and previous degree type, $\phi = -.025 p = .738$.

Therefore, we accept the null hypothesis that there is no association between race/ethnicity and previous degree type.

Marital status

A Chi-square test for association was conducted between marital status and previous degree type (see Table 4.4). All expected cell frequencies were greater than five. There was not a statistically significant association between marital status and previous degree type, $\chi^2(1) = 1.707, p = .426$. There was a mildly strong, but not significant association between marital status and previous degree type, $\phi = .234 p = .426$. Therefore, we accept the null hypothesis that there is no association between marital status and previous degree type.

Table 4.4. Chi-square analysis between previous degree type and marital status

<table>
<thead>
<tr>
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<th></th>
<th></th>
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<tbody>
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<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<td>32</td>
<td>47</td>
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<td>36</td>
<td>36</td>
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n=177
Degree aspiration

A Chi-square test for association was conducted between degree aspiration and previous degree type (see Table 4.5). All expected cell frequencies were greater than five. There was a statistically significant association between degree aspiration and previous degree type, $\chi^2(1) = 8.284, p = .004$. There was a weak, but significant association between degree aspiration and previous degree type, $\phi = -.214, p = .004$. Therefore, we reject the null hypothesis that there is no association between degree aspiration and previous degree type, and accept the alternative hypothesis that there is an association between degree aspiration and previous degree type.

Table 4.5. Chi-square analysis of between previous degree type and degree aspiration

<table>
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<td>Yes</td>
<td>X²</td>
</tr>
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<td>Degree type</td>
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<td></td>
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<td>Associate Degree</td>
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<td>81</td>
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<td>8.284</td>
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<td>26</td>
<td>63</td>
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<td>37</td>
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n=181

Major change

A Chi-square test for association was conducted between major change and previous degree type (see Table 4.6). All expected cell frequencies were greater than five. There was a statistically significant association between major change and previous degree type, $\chi^2(1) = 7.033, p = .008$. There was a moderately strong association between major change and previous degree type, $\phi = .208, p = .008$. Therefore, we reject the null hypothesis that there is no association between major change and previous degree type, and accept the alternative hypothesis that there is an association between gender and previous degree type.
Table 4.6. Chi-square analysis between previous degree type and change of major

<table>
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<th>Yes</th>
<th>X²</th>
<th>p</th>
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<td>55</td>
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<td>0.008</td>
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n=180.

Research Question 4

4a. Can previous degree earned be predicted by demographic (age, gender, race/ethnicity, marital status, dependents) and motivational enrollment factors?

4b. Can previous degree type be predicted by demographic (age, gender, race/ethnicity, marital status, dependents) and motivational enrollment factors?

Previous degree earned

A binomial logistic regression was conducted answer research questions 4a and 4b, in order to determine which independent variables (age, gender, race/ethnicity, marital status, dependents, degree aspiration, and enrollment motivations) were predictors of participant previous degree status (has not earned a previous degree or has earned a previous degree). Multicollinearity was tested with both the tolerance and variance inflation factor (VIF). All independent variables had tolerance values greater than 0.1, and VIF values less than 10. Therefore, multicollinearity was not an issue. The independent variables were entered in three blocks using the logistic regression analysis. F test was statistically significant at the p<.001 level for all three blocks, and the F value decreased as independent variables were added for each model. Each block was described separately, and the data can be viewed in Table 4.7.

Demographics. The first block included the independent variables that focused on demographic information: age, gender, race/ethnicity, marital status, and dependents. Of these variables, gender, race/ethnicity, and marital status were categorical variables. The
Table 4.7. Logistic regression predicting likelihood of previous degree earned based on demographic characteristics, degree aspiration, and enrollment factors

<table>
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<tr>
<th></th>
<th>B</th>
<th>SE</th>
<th>Wald</th>
<th>df</th>
<th>p</th>
<th>Odds Ratio</th>
<th>95% CI for Odds Ratio</th>
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<td>.194</td>
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<td>.000*</td>
<td>1.081</td>
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<td>.488</td>
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<td>.953</td>
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<td>1.056</td>
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<td>.000*</td>
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<td>.014</td>
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<td>.976</td>
<td>1.003</td>
<td>.809</td>
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<td>.067</td>
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<td>.981</td>
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<td>.980</td>
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*Significant at p < .05; N=966.
Key: CI=Confidence Interval; EF=Enrollment Factor; Gender is for males compared with females.
logistic regression model was statistically significant [-2 log likelihood= 795.168, $\chi^2(6) = 112.890, p<.001$]. The model explained 18.1% (Nagelkerke R$^2$) of the proportion of the total variability of the outcome that is accounted for by the model for previous degree earned and correctly classified 81.8% of cases. However, the Hosmer and Lemeshow test was also statistically significant at the $p<.001$ level, indicating the first model was not a good fit. Of the five independent variables in block one, only age was statistically significant at the $p<.001$ level.

**Degree Aspiration.** The second block added the variable degree aspiration, which indicates whether or not a participant intended to earn an associate’s degree at the current institution. The logistic regression model was statistically significant, [-2 log likelihood= 779.244, $\chi^2(7) = 128.814, p<.001$]. The model explained 20.5% (Nagelkerke R$^2$) of the proportion of the total variability of the outcome that is accounted for by the model for previous degree earned and correctly classified 82.3% of cases. Of the independent variables, age was again statistically significant in addition to degree aspiration. Both were statistically significant at the $p<.001$ level.

The second model was a better fit than the first model, as the -2 log likelihood value decreased, the Nagelkerke R$^2$ value increased, and percentage accuracy in classification increased. However, the Hosmer and Lemeshow test was also statistically significant at the $p<.001$ level, indicating the second model was also not a good fit.

**Motivational factors.** The third block added the nine motivational factors for enrolling in college at the current institution. The logistic regression model was statistically significant, [-2 log likelihood= 744.243, $\chi^2(7) = 163.815, p<.001$]. The model explained 25.6% (Nagelkerke R$^2$) of the proportion of the total variability of the outcome that is
accounted for by the model for *previous degree earned* and correctly classified 82.6% of cases. The Hosmer and Lemeshow test was not statistically significant at $p = .067$, indicating the third model was a good fit. The third model was the best fit of the three models. With each model, the -2 log likelihood value decreased, the Nagelkerke $R^2$ value increased, and percentage accuracy in classification increased. The third block was also the only model determined to be a good fit by the Hosmer and Lemeshow test.

Six of the independent variables tested—age, degree aspiration, currently unemployed, unsatisfied with current employment, prepare for license or exam, and prepare to transfer to a four-year institution—were statistically significant predictors of previous degree earned. The odds ratio for the age variable was 1.081 with a 95% confidence interval of [1.056, 1.106]. This suggests that as age increases one unit, students are 1.081 times more likely to have earned a previous degree. Degree aspiration had an odds ratio of 3.151 with a 95% confidence interval of [1.865, 5.324]. This means that students that plan to complete an associate’s degree in their current program of study are more likely to have earned a previous degree.

Four of statistically significant variables were motivational factors. The variable *unsatisfied with current* employment had the odds ratio 1.196 with a 95% confidence interval of [1.044, 1.369] Meaning an increase in the importance of the variable *unsatisfied with current* employment increases the likelihood that a student has earned a previous degree. *Prepare for a license or exam* had the odds ratio 1.168 with a 95% confidence interval of [1.021, 1.336]. Which also indicates that an increase in the importance of the variable *prepare for a license or exam* increases the likelihood that a student has earned a previous degree. In contrast, the variable *currently unemployed* had the odds ratio .831 with a 95%
confidence interval of [.730, .946]. This means that an increase in the importance of the factor currently unemployed decreases the likelihood that a student had earned a previous degree. Last, prepare to transfer to a four-year institution had the odds ratio .783 with a confidence interval of [.695, .881]. This also indicates that an increase in the importance of the variable prepare to transfer to a four-year institution decreases the likelihood that a student has earned a previous degree.

**Previous degree type**

A binomial logistic regression was conducted to determine which independent variables (age, gender, race/ethnicity, marital status, dependents, degree aspiration, and enrollment motivations) were predictors of participant previous degree type (postassociate or postbaccalaureate). Multicollinearity was tested with both the tolerance and variance inflation factor (VIF). All independent variables had tolerance values greater than 0.1, and VIF values less than 10. Therefore, multicollinearity was not an issue. The independent variables were entered in three blocks using the logistic regression analysis. F test was statistically significant at the \( p < .01 \) level for all three blocks. Each block has been described separately, and the data can be viewed in Table 4.8.

**Demographics.** The first block included the independent variables that focused on demographic information: age, gender, race/ethnicity, marital status, and dependents. Of these variables, gender, race/ethnicity, and marital status were categorical variables. The logistic regression model was statistically significant [-2 log likelihood= 207.369, \( \chi^2(6) = 19.984, p=0.003 \)]. The model explained 15.3% (Nagelkerke R²) of the proportion of the total variability of the outcome that is accounted for by the model for previous degree type and correctly classified 65.9% of cases. The Hosmer and Lemeshow test was not statistically
Table 4.8. Logistic regression predicting likelihood of previous degree type based on demographic characteristics, degree aspiration, and enrollment factors

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*Significant at $p < .05$; $N=180$.

Key: CI=Confidence Interval; EF=Enrollment Factor; Gender is for males compared with females.
significant at $p=.550$, indicating the first model was a good fit. Of the independent variables in block one, two were statistically significant: (a) gender ($p=.015$), and (b) dependents ($p=.007$).

**Degree aspiration.** The second block added the variable *degree aspiration*, which indicates whether or not a participant intended to earn an associate’s degree at the current institution. The logistic regression model was statistically significant, [-2 log likelihood= 197.451 $\chi^2(7) = 29.901$, $p<.001$]. The model explained 22.2% (Nagelkerke R$^2$) of the proportion of the total variability of the outcome that is accounted for by the model for *previous degree type* and correctly classified 64.6% of cases. Three of the independent variables were statistically significant: (a) gender ($p=.010$), (b) dependents ($p=.008$), and (c) degree aspiration ($p=.003$).

It is difficult to determine if the second model is a better fit or not. While the -2 log likelihood value decreased, and the Nagelkerke R$^2$ value increased indicating a potential better fit, the percentage accuracy in classification decreased indicating a less accurate model. The Hosmer and Lemeshow test was not statistically significant at $p=.273$, indicating the second model was also a good fit.

**Motivational factors.** The third block added the nine motivational factors for enrolling in college at the current institution. The logistic regression model was statistically significant, [-2 log likelihood= 172.573, $\chi^2(16) = 54.780$, $p<.001$]. The model explained 37.9% (Nagelkerke R$^2$) of the proportion of the total variability of the outcome that is accounted for by the model for *previous degree type* and correctly classified 72.0% of cases. The Hosmer and Lemeshow test was not statistically significant at $p=.398$, indicating the third model was a good fit. Even though all three models passed the “goodness-of-fit”
Hosmer and Lemeshow test, the third model was the best fit of the three models. The third model had the lowest -2 log likelihood value, the highest Nagelkerke $R^2$ value, and the highest percentage accuracy in classification.

Four of the independent variables tested—gender, dependents, degree aspiration, and prepare to transfer to a four-year institution—were statistically significant predictors of previous degree type. The odds ratio for the gender variable was 3.214 with a 95% confidence interval of [1.210, 8.536]. This suggests that females are more likely to have previously earned a bachelor’s degree or higher as opposed to an associate’s degree. Degree aspiration had an odds ratio of 3.870 with a 95% confidence interval of [1.450, 10.325]. This means that students that intend to complete an associate’s degree in their current program of study are more likely to have previously earned a bachelor’s degree or higher. In contrast, the variable dependents had the odds ratio .538 with a 95% confidence interval of [.357, .810]. This means that an increase in the number of dependents decreases the likelihood that a student had previously earned a bachelor’s degree or higher. Lastly, prepare to transfer to a four-year institution had the odds ratio .649 with a 95% confidence interval of [.505, .835]. This also indicates that an increase in the importance of the variable prepare to transfer to a four-year institution decreases the likelihood that a student had previously earned a bachelor’s degree or higher. Or, that an increase in dependents and the importance of preparing to transfer to a four-year institution increases the likelihood a student previously earned an associate’s degree.

**Summary**

This chapter summarized the results of this study. First, descriptive results depicted the demographic characteristics of students who participated in this study. Secondly, a
Kruskal-Wallis H non-parametric analysis results provided findings that can be used to show motivational differences for enrollment among non-degree, postassociate, and postbaccalaureate students. Third, Chi-square analysis of association produced results that can be used to show relationships or associations between postassociate and postbaccalaureate students and several other variables. Last, two binomial logistic regression analyses revealed whether various models of independent variables could predict previous degree earned or previous degree type. In the next chapter, the author will discuss the interpretations of these findings. The study concludes with the implications for practice and future research.
CHAPTER 5. DISCUSSION, IMPLICATIONS, AND CONCLUSION

Overview

The final chapter provides a brief summary of the study, an interpretation of the findings presented in Chapter 4 based on the research questions, a discussion on the limitations and implications, and recommendations for future research, policy, and practices. The discussion of the findings is organized by the types of analyses used, and provides answers to all of the research questions. Practical implications for community college leaders and administrators are provided, and recommendations for future studies were based on the findings and research limitations.

Summary of the Study

The purpose of this study was to understand the motivations behind the enrollment of students at a large, public, community college in the Midwest who have already earned an associate's degree or higher by: (a) examining demographic and motivational differences among postbaccalaureate, postassociate, and non-degree students, and (b) identifying which factors matter most to PRTS when making the decision to enroll at a community college. The study was conducted through the lens of human capital theory and the assumption that students invest (enroll) in higher education in order to gain economic benefit. The economic benefit could be increased wages, personal satisfaction, or changes in employment status. A quantitative methodological approach was appropriate to determine associative and predictive factors that lead to PRTS enrollment at a community college. The PRT survey was designed specifically for this study to allow participants to self-identify as PRTS and indicate their educational and employment information to be analyzed in order to better understand the population. Participants were students above the age of 18 enrolled at a large,
Discussion of the Findings

Research Question 1

1. What are the characteristics of postbaccalaureate reverse transfer students at a large, public, community college in the Midwest?

The first research question sought to understand demographic characteristics of student respondents from the PRT survey, and differences among non-degree, postassociate, and postbaccalaureate students. A summary of the demographic characteristics of the survey participants and the differences among non-degree, postassociate, and postbaccalaureate students are provided in response to this question.

Gender and age. The gender composition of all survey participants was 72.4% female and 27.6% male. In comparison, the host institution’s FY 2016 credit enrollment was 51.4% female, and 47.6% male (“Credit Students Demographic Fact Sheet,” 2016). Therefore, the survey sample skewed female. When broken down by degree level, 61.9% of non-degree, 62.4% of postassociate, and 81.7% of postbaccalaureate participants were female, all of which were higher than the host institution’s 51.4%.

The age categories reported by the host institution are not the exact same as those calculated by this report. The youngest age category reported by the host institution was 18 to 22, while this study reported ages 18 to 24. For the host institution, 51.2% of the population was of ages 18-22, compared to 62.8% of survey respondents that were of ages 18-24. By degree level, 61.1% of non-degree, 27.7% of postassociate, and 18.3% of postbaccalaureate students were ages 18-24. The second age category reported by the host
institution was ages 23-39, compared to the ages 25-39 for this report. For the host
institution, 28.6% of the population was of ages 23-39 compared to 23.6% of survey
respondents that were of ages 25-39. By degree level, 17.0% of non-degree, 33.7% of
postassociate, and 49.5% of postbaccalaureate students were ages 25-39. The third age
category of ≥40, was reported the same by both the host institution and this report. For the
host institution, 6.6% of the population was ages ≥40, compared to 13.6% of survey
respondents. By degree level, 8.8% of non-degree, 30.7% of postassociate, and 26.9% of
postbaccalaureate students were ages ≥40. Overall, higher percentages of the host-
institution’s population, and non-degree students fall into the youngest age category, while
postassociate and postbaccalaureate have higher percentages of students that within the upper
two age categories. This information is further confirmed when average age is reported for
each of the different survey participant groups. The average age for each group is 24.5 for
non-degree, 33.8 for postassociate, and 34.4 for postbaccalaureate. There is about a nine-
year age difference between the non-degree participants and those with a previous degree,
whereas there is only about a half-a-year difference in average age between postassociate and
postbaccalaureate student groups. Friedel & Friesleben (2016) reported the average age of
PRTS (including postassociate) in Iowa was 27 from fiscal years 2010 to 2014. The PRTS
participants in this study had older average ages, which skew older than the data from the
previous report. This could be due to the time difference in the data collected, that the host
institution has an older population of PRTS, or that the average age of the respondents is
skewed. The data from this study did not substantiate the idea in the 2016 report that the
inclusion of postassociate degree earners significantly lowered the average age. A statewide
survey of PRTS would provide a better comparison of average age by degree level to the previous study.

**Race/ethnicity.** Overall, the race/ethnicity composition of survey participants is similar to the demographics of the host institution. The largest four race/ethnicity groups of credit-enrolled students at the host institution is as follows: 71.4% White, 10.5% Black or African American, 5.0% Asian, and 4.8% Hispanic/Latinx. The largest four race/ethnicity groups of all survey respondents is: 80.6% White, 17.3% Black or African American, 6.6% Hispanic/Latinx, and 2.2% Asian. Although the four groups are the same, the order of the Asian and Hispanic/Latinx groups switched places between the overall student population and the survey participants. A greater percentage of Hispanic/Latinx students participated, whereas a lower percentage of Asian students participated. Friedel and Friesleben (2016) also found that the majority of PRTS in Iowa were White, with the next three highest race/ethnicities were Asian, Black or African American, and Hispanic/Latinx.

When race/ethnicity is looked at by degree level, the percentages are similar to that of the overall survey sample. White students comprised 66.6% of non-degree, 75.2% of postassociate, and 76.3% of postbaccalaureate. Black or African American students were 9.0% non-degree, 7.9% postassociate, and 7.5% postbaccalaureate. Hispanic/Latinx students were 6.1% of non-degree, 3.0% of postassociate, and 3.2% of postbaccalaureate. Lastly, Asian students were 1.7% of non-degree, 1.0% of postassociate, and 4.3% of postbaccalaureate. As is evident by the data, the students were primarily white for each degree level, with higher percentages for the groups with previous degrees. There was a greater percentage Black or African American, and Hispanic/Latinx student that had not earned previous degrees than had earned a previous degree. The opposite was true for Asian
respondents. The largest percentage was for the postbaccalaureate group. Overall, the race/ethnicity composition of the survey was fairly representative of the overall composition of the host institution.

**Marital Status and dependents.** Marital status is reported by the categories, no longer married, married, and never married. The category no longer married is made up of the responses, separated, divorced, and widowed. The majority of non-degree students had never been married (67.3%), where smaller percentages of postassociate (46.5%), and postbaccalaureate (38.7%) students had never been married. In contrast, married students were primarily either postbaccalaureate (38.7%) or postassociate (31.7%) compared to non-degree (14.6%) students. These percentages are not surprising given that the groups with previous degrees are on average nine-years older than those without a previous degree. Lastly, all students were least likely to respond they were no longer married at 4.4% for non-degree, 11.9% for postassociate, and 15.1% for postbaccalaureate.

Participants were able to indicate their number of dependents from one through ten or more. Given the small cell size for numbers higher than six, those responses were combined to the category six or higher. The majority of respondents for all groups indicated they had one dependent. The percentages varied for each group for responses two, three, four, and five. Only non-degree (n=15, 1.5%) and postassociate degree (n=4, 4%) students had participants indicate they had six or more dependents. By looking at the data, one assumption could be made that the higher the degree level, the fewer the number of dependents a student has.

**Degree aspirations and major change.** The majority of all participants indicated they intended to earn an associate’s degree at the host institution. Both non-degree and
postassociate degree student groups had 80.2% of participants answer that they intended to earn an associate’s degree, as compared to 67.7% of postbaccalaureate degree earners.

Students that had earned a previous degree were asked to indicate both their previous and current programs of study. Of the 84 postassociate students, 54.5% were pursuing a different program of study, compared to 75.3% of postbaccalaureate students. It seems that postbaccalaureate students are most likely to enroll in a different program of study. This could be to add specific skills in a current career field that doesn’t match previous education experiences, or to change career fields completely.

Overall, non-degree students tend to be White females between the ages of 18-24 that have never been married, have one dependent, and intend to earn an associate’s degree. Postassociate students tend to be White females between the ages of 25-39 that have never been married, have one dependent, intend to earn an associate’s degree, and are pursuing a different program of study. Lastly, postbaccalaureate students tend to be White females between the ages of 25-39 that are either married or have never been married, have one dependent, intend to earn an associate’s degree, and are pursuing a different program of study. The primary difference in demographic characteristics is that of age between those with or without a previous degree. All of the groups are primarily White females that have one dependent and intend to earn an associate’s degree. Only postbaccalaureate students had a larger percentage of students that were married. Both postassociate and postbaccalaureate students were primarily pursuing different programs of study.
Research Question 2

2. Are there statistically significant motivational differences among postbaccalaureate, postassociate, and non-degree students enrolled at a large, public, community college in the Midwest?

The second research question sought to understand what, if any, differences there were in motivational factors to enroll at a community college among non-degree, postassociate, and postbaccalaureate students. This question was asked to try to understand what motivated students to enroll at the host community college, and if the motivations differed among students that did or did not have a previous degree. Participants were asked to rank each motivational factor by level of importance from “not at all important” to “extremely important.” A summary of the findings for the motivational factors is provided as follows.

Four of the nine motivational factors were found to be not statistically significant by the Kruskal-Wallis H nonparametric analysis of variance: (a) learn new skills; (b) advancement in current field of study; (c) personal growth and interests; and (d) prepare for license or exam. Since the findings were not statistically significant, we accept the null hypothesis for all four of these motivational factors that there is no statistically significant difference among non-degree, postassociate, and postbaccalaureate students. Participants in each category may have indicated that one of these factors were important, or that there was a difference in importance between groups, but the test indicated that these differences were not significant enough to study further.

Five of the motivational factors were determined to be statistically significant. For each of these five factors we both reject the null hypothesis that there is no statistically significant difference, and accept the alternative hypothesis that there is a statistically significant difference among the groups.
significant difference among non-degree, postassociate, and postbaccalaureate students. Each of these factors will be discussed separately below.

**Currently unemployed.** The motivational factor, *currently unemployed* was statistically significant, and the post hoc test showed that the difference was between the postbaccalaureate and non-degree student groups. The median response for postbaccalaureate students was that being currently unemployed was “not at all important”, and the median response for non-degree students were “moderately important.” Postbaccalaureate students are older than non-degree, and usually working at the time of enrollment, whereas non-degree students were mainly in the age category to fall right after high school and probably not working full-time, if at all. This difference shows that it is significant that non-degree students are more motivated by being unemployed than postbaccalaureate students.

**Currently underemployed.** Currently underemployed means that a person is working, but in a job or career that is lower than their skill level or salary. The post hoc test determined that there was a significant difference between postbaccalaureate and non-degree students. Postbaccalaureate median rating was “slightly important”, and the median rating for non-degree was “moderately important.” Non-degree students had the same median for unemployed as for underemployed. Non-degree students could have assigned the same meaning to both of these motivational enrollment factors given the median score was the same, as being unemployed could also be considered unemployed. The postbaccalaureate median moved up one rating from “not at all important” to “slightly important”, suggesting some of the postbaccalaureate group feel that unemployment is a contributing factor to their
choice to enroll in a community college. The difference in motivation is smaller between these two groups, but the difference is still significant.

**Unsatisfied with current employment.** The motivational factor, *unsatisfied with current employment* was statistically significant, and the post hoc test showed that the difference was between the postassociate and non-degree student groups. The median response for both non-degree and postassociate students regarding being unsatisfied with current employment was “moderately important.” Since both groups had the same median response, it is necessary to look at the means for a way to differentiate between the two groups. The mean response for non-degree students was 2.83, which places their response somewhere between “slightly important” and “moderately important.” The mean response for postassociate students was 3.25, which places their response somewhere between “moderately important”, and “very important.” It is significant that postassociate students put more importance into not being satisfied with current employment as a motivational factor to enroll.

**Prepare to transfer to a four-year institution.** The motivational factor, *prepare to transfer to a four-year institution* was statistically significant, and the post hoc test showed that the difference was between both the postbaccalaureate and postassociate student groups, and the postbaccalaureate and non-degree student groups. The median response for postbaccalaureate students regarding preparing to transfer was “not at all important”; the median response for postassociate was “moderately important”, and for non-degree students the median response was “very important.” Postbaccalaureate students do not put an importance into preparing for transfer as a reason to enroll, and their response is significant from both non-degree and postassociate students that do assign some level of importance into
transferring. This is an important significant difference that shows that postbaccalaureate students are most likely not looking to move onto an additional bachelor’s degree, but looking to satisfy their additional educational goals at the community college. Both the postassociate and non-degree students put an importance into transferring to potentially earn their first bachelor’s degree. The difference between postassociate and non-degree was not significant.

**Earn more money.** The motivational factor, *earn more money* was statistically significant, and the post hoc test showed that the difference was between both the postbaccalaureate and postassociate student groups, and the postbaccalaureate and non-degree student groups. The median response for postbaccalaureate students regarding preparing to transfer was “very important”; and the median response for both postassociate non-degree was “extremely important.” All three groups placed high importance on earning more money as a factor that influenced enrollment at the host community college. The difference between postbaccalaureate and the other two groups is only one value of importance apart, however that difference is significant. Postassociate and non-degree students are likely earning less money than postbaccalaureate students and gave the highest importance available to earning more money. This is congruent to human capital theory that students invest in education for an economic benefit. A higher salary or wages would be a personal economic benefit to their investment in education.

Four of the five enrollment factors discussed separately were statistically significant between the postbaccalaureate and the non-degree student groups. Two of the factors were statistically significant between the postbaccalaureate and postassociate groups, and one factor was statistically significant between the postassociate and non-degree student groups.
The non-degree group had a statistically significant difference with either one of the two PRTS groups for all five motivational factors, indicating that overall non-degree students have greater differences with PRTS than differences between postbaccalaureate and postassociate.

It was stated previously in the review of the literature that: Quinley and Quinley (1999) summed up the educational goals of PRTS to the following five categories: (a) career exploration; (b) current job skills update; (c) supplemental income; (d) new career; and (e) personal interest. The two primary underlying motivations behind the five categories are either personal or financial. According to the Kruskal-Wallis H test, the five motivational factors that had statistically significant differences were: (a) currently unemployed; (b) currently underemployed; (c) unsatisfied with current employment; (d) prepare to transfer to a four-year institution; and (e) earn more money. These are also all personal or financial motivations, and are congruent with the factors listed by Quinley and Quinley (1999).

The five motivational factors are also congruent with the theoretical perspective of human capital theory that both individuals and society obtain economic benefits from investment in people (Sweetland, 1996). It also reaffirms that according to HCT, when PRTS invest in community college education, they should see growth in academic knowledge, personal growth, and economic benefits such as new employment and increased earning potential. The findings indicate that the significant factors do align with new employment (currently unemployed, currently underemployed, unsatisfied with current employment), and increased earning potential (earn more money). The remaining significant factor, prepare to transfer to a four-year institution, aligns with growth in academic knowledge and personal growth.
Research Question 3

The third set of research questions sought to understand what, if any associations existed between previous degree (postassociate and postbaccalaureate) students and various characteristics. The research questions asked:

3a. Is there an association between gender and previous degree type students enrolled at a large, public, community college in the Midwest?

3b. Is there an association between race/ethnicity and previous degree type students enrolled at a large, public, community college in the Midwest?

3c. Is there an association between marital status and previous degree type students enrolled at a large, public, community college in the Midwest?

3d. Is there an association between degree aspiration and previous degree type students enrolled at a large, public, community college in the Midwest?

3e. Is there an association between major change and previous degree type students enrolled at a large, public, community college in the Midwest?

Five Chi-square analyses were run to determine if there were any statistically significant associations between previous degree type, and gender, race/ethnicity, marital status, degree aspirations, and change of major. The results for race/ethnicity and marital status were not statistically significant, so we accept the null hypothesis that there is no association between previous degree type and either race/ethnicity or marital status.

The results for Chi-square analysis between previous degree type, and gender, degree aspirations, and change of major were statistically significant. Therefore we reject the null hypothesis that there is no association, and accept the alternate hypothesis that there is an association, for all three of the statistically significant Chi-square tests. It is determined that males and females are statistically different on whether or not they have earned a previous bachelor’s degree. It is more likely that a female is a postbaccalaureate student. It is also determined that there is a difference between students that do or do not intend to earn an
associate’s degree. It is more likely for students that intend to earn an associate’s degree to be a postbaccalaureate student. Lastly, it is determined that there is a difference between whether or not a change in program of study took place. It is more likely that postbaccalaureate students will have a change in program of study. These are the strongest associations between students with previous degree, and help differentiate between postassociate and postbaccalaureate students at the host community college.

**Research Question 4**

The fourth set of research questions sought to understand what, if any associations existed between previous degree (postassociate and postbaccalaureate) students and various characteristics. The research questions asked:

4a. *Can previous degree earned be predicted by demographic (age, gender, race/ethnicity, marital status, dependents) and motivational enrollment factors?*

4b. *Can previous degree type be predicted by demographic (age, gender, race/ethnicity, marital status, dependents) and motivational enrollment factors?*

Two binomial logistic regression tests were run to determine if membership to a particular group could be predicted by demographic and motivational enrollment factors. Each logistic regression will be discussed below.

**Previous degree earned.** The first binomial logistic regression was run for the variable *previous degree earned*, that includes the two groups: non-degree and previous degree. The following variables were added in three blocks in order to see which factor, if any were statistically significant to predicting membership to the previous degree group: *age, gender, race/ethnicity, marital status, dependents, degree aspiration, learn new skills, currently unemployed, currently underemployed, advancement in current field of employment, unsatisfied with current employment, personal growth and interests, prepare for license or exam, prepare for transfer to a four-year institution, and earn more money.*
Four of the factors were determined to predict that a student was more likely to belong the group that had earned a previous degree. These were, *age, degree aspiration, unsatisfied with current employment, and prepare for a license or exam*. This means that students who are older, plan to earn an associate’s degree, and place a higher importance on the factors *being unsatisfied with current employment or prepare for a license or exam*, are more likely to be a student that has earned a previous degree. In comparison, students that place a higher importance on the factors *currently unemployed and prepare to transfer to a four-year institution* are more likely to be non-degree students. Most of these predictive factors are not very surprising. It is understandable that students without a previous degree would put more importance on looking for employment and transfer than students that have already earned a degree. It is a bit surprising that degree aspiration was more likely to predict a student had earned a previous degree than those that had not. This might suggest that students without a previous degree are planning to transfer to four-year institutions without planning to earn an associate’s degree first. It is also possible that students that have already earned a degree understand the value of a degree and plan to add an additional credential to their resume.

*Previous degree type.* The second binomial logistic regression was run for the variable *previous degree type*, which includes the two groups: postassociate and postbaccalaureate. The following variables were added in three blocks in order to see which factor, if any were statistically significant to predicting membership to the previous degree group: *age, gender, race/ethnicity, marital status, dependents, degree aspiration, learn new skills, currently unemployed, currently underemployed, advancement in current field of*
employment, unsatisfied with current employment, personal growth and interests, prepare for license or exam, prepare for transfer to a four-year institution, and earn more money.

Two of the factors were determined to predict that a student was more likely to belong the postbaccalaureate group. These were gender, and degree aspiration. Females, and students that place a higher importance on earning an associate’s degree are more likely to be postbaccalaureate students. Both of these factors also had significant associations with previous degree - postbaccalaureate, as discussed previously in the Chi-square analysis section. In contrast, the factors dependents, and transfer to a four-year institution were more likely to predict postassociate students. The more dependents a student had, and the higher the importance a student placed on transferring to a four-year institution, the more likely it is that student will have earned a previous associate’s degree.

These predictive factors generalize membership in the previous degree type group. Further research could look further into why these factors are associated with their respective groups. The data indicate that the higher the degree, the fewer the dependents. This could be that students with a bachelor’s put education and career ahead of family, and have not yet had the opportunity to reach more than five dependents. It could also be a conscious choice to have fewer dependents. The fact that the data show that postbaccalaureate students are most likely to indicate they plan to earn an associate’s could also be explored. Do the other students not put importance on earning a degree prior to transfer or entering the workforce? Do postbaccalaureate students better understand the importance of earning a degree for employment and earning potential? Many assumptions could be made behind the predictive likelihoods of the logistic regression analysis, but future research could provide a narrative to accompany the quantitative research.
Limitations

Quantitative analysis was applied in this study to understand the motivations behind the enrollment of students at a large, public, community college in the Midwest that have already earned an associate's degree or higher. There were three main limitations of this study. First, the postbaccalaureate reverse transfer student survey data were comprised of self-reported information. Participants were asked to self-identify if they had earned a previous degree, and how important certain factors were that led to enrollment at their current institution.

Second, due to limited responses of some demographic characteristics, some analysis could only be completed by recoding answers with multiple responses to a binary response in order to protect participants and provide valid statistical analysis. For example, race and ethnicity was recoded to white and non-white due to the small cell size for several of the other categorical choices.

Third, since the survey was disseminated to one community college, the specific data results may not be generalizable outside of the Midwest, or this particular institution. The study will still provide a context for similar studies at other institutions, or for a nationwide study of this particular population.

Implications for Policy and Practice

The findings of this study provide a foundation to provide implications to community college leaders, administrators, and educators. These implications are summarized below.

First, the results of this study can provide information regarding the differences among students without a previous degree, those with a previous associate’s degree, and those with a previous bachelor’s degree or higher. Most policies and practices currently in
place at community colleges were created with a traditional aged student on a linear transfer path to a four-year institution. By understanding the various differences (demographic, aspirational, and motivational) among these student groups—current policies, procedures, and student resources could be examined through a PRTS lens. This examination would allow for a thoughtful review process that may lead to a change or removal of current policy or the creation of new policy.

It is in a community colleges best interest to provide policies and procedures congruent to the needs of PRTS that enroll on their campuses. It was mentioned in chapter one that of the many issues facing community colleges, three would be the focus of this study: (a) declining credit enrollment, (b) the college completion agenda, and (c) the skills gap. These will be discussed individually.

As mentioned earlier in the literature, PRTS looked for programs in a location that was close to home, included program of choice, was low cost, and provided an ease of transition back into college (Townsend, 2009). Iowa Code 206c made sure that community colleges were strategically located across the state of Iowa so they would be accessible to residents locked into their locations due to work and family. Previous studies on PRTS showed that there has been a prevalence of PRTS on community college campuses for years (Friedel & Friesleben, 2016; Leigh, 2009). There could be more potential PRTS living in the local community that have not yet found the motivation, but could be recruited to seek out a new program of study. Community colleges could use the demographic and motivational information about PRTS in order to craft a strategic recruitment plan aimed at enrolling these students. Program and course offerings could be altered to meet the needs of PRTS that may still need to work and care for a family. The data showed that many PRTS either are or were
previously married and have at least one dependent. The access to and type of resources available to help students should benefit all students, including PRTS. Since PRTS most likely live in the surrounding community, a recruitment focus away from a traditional new direct from high school (NDHS) student to PRTS could help alleviate the declining enrollment that has been taking place over the past six years (see Figure 1.1).

The results of this study showed that there is a significant association between PRTS and their aspiration to earn an associate’s degree during their current program of study. PRTS have already proven themselves academically successful by completing a previous degree, and paired with an intention to earn a second degree, there is a greater likelihood of this student population completing their program of study than those without a degree. If PRTS are recruited in greater numbers, they could increase the completion rate used for reporting and scrutinizing of community colleges due to the college completion agenda.

Community colleges have a long history of working with local employers to offer training specific to the needs of the local workforce. It is due to this history that community colleges are well suited to help address the skills gap by educating and training students to meet the needs of employers in the surrounding communities. Oftentimes these high demand programs do not have enough students enrolled to meet the demand. Due to stagnant high school graduation rates and increased college competition, there aren’t enough NDHS students to meet the demand. Community colleges can use the information from this study to find employment matches between PRTS and potential employers in order to address the skills gap.

Quinley and Quinley (1999) summed up the educational goals for PRTS to the following five categories: (a) career exploration, (b) current job skills update,
supplemental income, (d) new career, and (e) personal interest. The two primary underlying motivations behind the five categories are either personal or financial. The results of the study validated this research. While some of the educational goals for PRTS are to satisfy personal goals or to switch to an area where they have more interest, others seek to enhance skills or seek new careers in order to earn higher salaries. Community colleges can use this information to promote high-demand careers to PRTS that are looking for something different or more financially solvent. Community colleges can use the information from the survey and the study to actively recruit PRTS to increase enrollment in areas that can help close the skills gap, while increasing completion rates throughout the process. PRTS are highly motivated students seeking a change living in local communities and need some encouragement that aligns with their needs and motivations to make a change.

The theoretical perspective used in this study was human capital, which is based on the premise that both individuals and society obtain economic benefits from investment in people (Sweetland, 1996). The research showed that the motivational factor *earn more money* was rated high in importance, and statistically significant for PRTS in their reason to enroll at a community college. This factor confirms the theory that individuals seek to invest in themselves for economic benefit. Society invests in PRTS through public funding to community colleges, and community colleges invest in PRTS through grants, scholarships, and the resources provided to facilitate student success. The economic benefit comes to society when PRTS graduate with a greater earning potential or career satisfaction. PRTS have an increased ability to invest back into the economy through purchasing power, and if their new employment is in an area of high need; they are also helping to alleviate the issue of the skills gap on local, regional, and national level.
Recommendations for Future Research

This study examined the motivations behind the enrollment of PRTS at a large, public, community college in the Midwest who already earned an associate’s degree or higher by: (a) examining demographic and motivational differences among postbaccalaureate, postassociate, and non-degree students; and (b) identifying which factors matter most to PRTS when making the decision to enroll at a community college. A few important outputs of the study were the PRT survey, the initial examination of postassociate students as part of the PRTS population, and the comparisons between PRTS and non-degree, and postassociate and postbaccalaureate students. These outputs contributed to the existing body of research literature with new knowledge and recommendations for future research.

First, the PRT survey could be distributed beyond one institution in order to facilitate a statewide, regional, or national study of PRTS enrolled at community colleges. The broader scope would help alleviate two of the limitations presented by this study: small cell size for reporting demographic information, and lack of generalizability to the overall community college student population across the nation. A larger study would also provide more of an awareness of PRTS in the research community and among community college leaders and alleviate the long gap in research on this subject. A larger response rate would also allow for additional statistical analysis that requires a larger dataset.

Second, this study provided quantitative results regarding PRTS. A qualitative study with the same population would allow for a deeper anecdotal analysis to accompany the data and results presented by this study. Interview questions could be formulated around the motivational factors analyzed with the Kruskal Wallis H test and binomial logistic regression
in order to tell the story behind the data. The pairing of a quantitative and qualitative analysis of this study would provide a more compelling research story to present to higher education leaders and educators in charge of creating policy that could positively impact this student population.

Last, this study was the first to examine postassociate students at the community college. This student population is as prevalent as the postbaccalaureate community. Although the postassociate student group has similarities to the postbaccalaureate group, the research showed there were also significant differences. Additional quantitative research focused solely on this population could allow for a more focused statistical analysis of this student population. A qualitative analysis specific to postassociate would also be beneficial. A few key questions to ask could be: “do you intend to transfer to complete a bachelor’s degree?” and “what led you to enroll for a second associate’s program before transferring to pursue a bachelor’s degree?”

**Conclusion**

This study focused on understanding who PRTS are and what motivates them to enroll at a community college through the lens of human capital theory. This study accomplished the research goals by creating the PRT survey, which provides a format to gather information on PRTS students and provide comparative constructs to further understand this population. This study also showed there were significant differences not only between degree and non-degree students, but also significant differences between postassociate and postbaccalaureate students. Findings from this study are informative to community college administrators, leaders, educators, and researchers who are interested in knowing more about different community college student populations.
This study contributed to the existing literature of postbaccalaureate reverse transfer students by (a) adding students that had previously earned an associate’s degree to the research, (b) adding recent research to a topic that has been stagnant for almost a decade, and (c) following up on two exploratory descriptive studies regarding PRTS in Iowa to provide a more in-depth analysis on the group of students.

Postbaccalaureate reverse transfer students (PRTS) are a category of students that have been enrolling at community colleges for decades, but primarily go unnoticed by the institutions they attend. The PRT survey provides a quantitative approach to understanding what motivates and makes PRTS unique in community colleges. The additional focus on postassociate students may encourage other researchers to study this group that seeks to earn an additional associate’s degree before transferring or entering the workforce. Understanding and seeking to enroll more PRTS could lead to increased enrollments and completions at community colleges, and more skilled employees to fill gaps in the workforce.
REFERENCES


Iowa Department of Education. (2017). Credit Enrollment and Credit Hours. Retrieved September 9, 2017, from https://public.tableau.com/views/CreditEnrollmentandCreditHours/CreditEnrollment?embed=y&:showVizHome=no&:host_url=https%3A%2F%2Fpublic.tableausoftware.com%2F&:tabs=yes&:toolbar=yes&:animate_transition=yes&:display_static_image=no&:display_spinner=no&:display_overlay=yes&:display_count=yes&:loadOrderID=0


APPENDIX A. SURVEY INSTRUMENT

PRTS in Iowa

Q1 Thank you for your consideration and agreement to participate in this important study. Today you will answer questions regarding your decision to enroll at Kirkwood Community College. The information gathered will provide feedback to the institution and the researcher. Be assured that your answers will be held in confidentiality. Please note that you must be at least 18 years of age to participate. It will take approximately five minutes to complete this survey. Thank you again for taking the time to share your information and participating in this study.

Condition: Thank you for your consideration... Is Displayed. Skip To: Are you 18 years of age or older?

Q2 Are you 18 years of age or older?
   1) Yes (1)
   2) No (2)


Q3 Section One - Educational Information

Q4 Have you earned a previous degree?
   3) Yes (1)
   4) No (2)

Condition: Yes Is Selected. Skip To: Have you previously earned a degree from Kirkwood Community College?

Q5 Have you previously earned a degree from Kirkwood Community College?
   1) Yes (1)
   2) No (2)

Q6 What is the highest degree you have earned? (Examples in parenthesis)
   3) Associate (AA, AS, AAS, AGS) (1)
   4) Bachelor (BA, BS) (2)
   5) Master (MA, MS, MBA, MFA) (3)
   6) Professional (MD, DO, DDS, JD) (4)
   7) Doctoral (PhD, EdD) (5)

Q7 What year did you earn this degree?

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<td>2021</td>
<td>98</td>
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<td>2022</td>
<td>99</td>
</tr>
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</table>
Q8 What was your previous area of study?

8) AGRICULTURE, AGRICULTURAL OPERATIONS, AND RELATED SCIENCES. (1)
9) NATURAL RESOURCES AND CONSERVATION. (2)
10) ARCHITECTURE AND RELATED SERVICES. (3)
11) AREA, ETHNIC, CULTURAL, GENDER, AND GROUP STUDIES. (4)
12) COMMUNICATION, JOURNALISM, AND RELATED PROGRAMS. (5)
13) COMMUNICATIONS TECHNOLOGIES/TECHNICIANS AND SUPPORT SERVICES. (6)
14) COMPUTER AND INFORMATION SCIENCES AND SUPPORT SERVICES. (7)
15) PERSONAL AND CULINARY SERVICES. (8)
16) EDUCATION. (9)
17) ENGINEERING. (10)
18) ENGINEERING TECHNOLOGIES AND ENGINEERING-RELATED FIELDS. (11)
19) FOREIGN LANGUAGES, LITERATURES, AND LINGUISTICS. (12)
20) FAMILY AND CONSUMER SCIENCES/HUMAN SCIENCES. (13)
21) LEGAL PROFESSIONS AND STUDIES. (14)
22) ENGLISH LANGUAGE AND LITERATURE/LETTERS. (15)
23) LIBERAL ARTS AND SCIENCES, GENERAL STUDIES AND HUMANITIES. (16)
24) LIBRARY SCIENCE. (17)
25) BIOLOGICAL AND BIOMEDICAL SCIENCES. (18)
26) MATHEMATICS AND STATISTICS. (19)
27) MILITARY SCIENCE, LEADERSHIP AND OPERATIONAL ART. (20)
28) MILITARY TECHNOLOGIES AND APPLIED SCIENCES. (21)
29) MULTI/INTERDISCIPLINARY STUDIES. (22)
30) PARKS, RECREATION, LEISURE, AND FITNESS STUDIES. (23)
31) BASIC SKILLS AND DEVELOPMENTAL/REMEDIAL EDUCATION. (24)
32) CITIZENSHIP ACTIVITIES. (25)
33) HEALTH-RELATED KNOWLEDGE AND SKILLS. (26)
34) INTERPERSONAL AND SOCIAL SKILLS. (27)
35) LEISURE AND RECREATIONAL ACTIVITIES. (28)
36) PERSONAL AWARENESS AND SELF-IMPROVEMENT. (29)
37) PHILOSOPHY AND RELIGIOUS STUDIES. (30)
38) THEOLOGY AND RELIGIOUS VOCATIONS. (31)
39) PHYSICAL SCIENCES. (32)
40) SCIENCE TECHNOLOGIES/TECHNICIANS. (33)
41) PSYCHOLOGY. (34)
42) HOMELAND SECURITY, LAW ENFORCEMENT, FIREFIGHTING AND RELATED PROTECTIVE SERVICES. (35)
43) PUBLIC ADMINISTRATION AND SOCIAL SERVICE PROFESSIONS. (36)
44) SOCIAL SCIENCES. (37)
45) CONSTRUCTION TRADES. (38)
46) MECHANIC AND REPAIR TECHNOLOGIES/TECHNICIANS. (39)
47) PRECISION PRODUCTION. (40)
48) TRANSPORTATION AND MATERIALS MOVING. (41)
49) VISUAL AND PERFORMING ARTS. (42)
50) HEALTH PROFESSIONS AND RELATED PROGRAMS. (43)
51) BUSINESS, MANAGEMENT, MARKETING, AND RELATED SUPPORT SERVICES. (44)
52) HIGH SCHOOL/SECONDARY DIPLOMAS AND CERTIFICATES. (45)
53) HISTORY. (46)
54) RESIDENCY PROGRAMS. (47)
Q9 Was there a time gap between your previous degree and your current program of study?
   55) Yes (1)
   56) No (2)

Condition: Yes Is Selected. Skip To: How long of a gap was there between y....Condition: No Is Selected. Skip To: What is your current program of study....

Q10 How long of a gap was there between your previous degree and your current program of study?
   57) Less than 1 year (1)
   58) 2-3 years (2)
   59) 4-5 years (4)
   60) 6-10 years (6)
   61) 11-15 years (7)
   62) 16-20 years (8)
   63) More than 20 years (9)

Q11 What is your general area of study currently at Kirkwood?
   64) AGRICULTURE, AGRICULTURE OPERATIONS, AND RELATED SCIENCES. (1)
   65) NATURAL RESOURCES AND CONSERVATION. (2)
   66) ARCHITECTURE AND RELATED SERVICES. (3)
   67) AREA, ETHNIC, CULTURAL, GENDER, AND GROUP STUDIES. (4)
   68) COMMUNICATION, JOURNALISM, AND RELATED PROGRAMS. (5)
   69) COMMUNICATIONS TECHNOLOGIES/TECHNICIANS AND SUPPORT SERVICES. (6)
   70) COMPUTER AND INFORMATION SCIENCES AND SUPPORT SERVICES. (7)
   71) PERSONAL AND CULINARY SERVICES. (8)
   72) EDUCATION. (9)
   73) ENGINEERING. (10)
   74) ENGINEERING TECHNOLOGIES AND ENGINEERING-RELATED FIELDS. (11)
   75) FOREIGN LANGUAGES, LITERATURES, AND LINGUISTICS. (12)
   76) FAMILY AND CONSUMER SCIENCES/HUMAN SCIENCES. (13)
   77) LEGAL PROFESSIONS AND STUDIES. (14)
   78) ENGLISH LANGUAGE AND LITERATURE/LETTERS. (15)
   79) LIBERAL ARTS AND SCIENCES, GENERAL STUDIES AND HUMANITIES. (16)
   80) LIBRARY SCIENCE. (17)
   81) BIOLOGICAL AND BIOMEDICAL SCIENCES. (18)
   82) MATHEMATICS AND STATISTICS. (19)
   83) MILITARY SCIENCE, LEADERSHIP AND OPERATIONAL ART. (20)
   84) MILITARY TECHNOLOGIES AND APPLIED SCIENCES. (21)
   85) MULTI/INTERDISCIPLINARY STUDIES. (22)
   86) PARKS, RECREATION, LEISURE, AND FITNESS STUDIES. (23)
   87) BASIC SKILLS AND DEVELOPMENTAL/REMEDIAL EDUCATION. (24)
   88) CITIZENSHIP ACTIVITIES. (25)
   89) HEALTH-RELATED KNOWLEDGE AND SKILLS. (26)
   90) INTERPERSONAL AND SOCIAL SKILLS. (27)
   91) LEISURE AND RECREATIONAL ACTIVITIES. (28)
   92) PERSONAL AWARENESS AND SELF-IMPROVEMENT. (29)
   93) PHILOSOPHY AND RELIGIOUS STUDIES. (30)
   94) THEOLOGY AND RELIGIOUS VOCATIONS. (31)
   95) PHYSICAL SCIENCES. (32)
   96) SCIENCE TECHNOLOGIES/TECHNICIANS. (33)
   97) PSYCHOLOGY. (34)
99) Public Administration and Social Service Professions. (36)
100) Social Sciences. (37)
101) Construction Trades. (38)
102) Mechanic and Repair Technologies/Technicians. (39)
103) Precision Production. (40)
104) Transportation and Materials Moving. (41)
105) Visual and Performing Arts. (42)
106) Health Professions and Related Programs. (43)
107) Business, Management, Marketing, and Related Support Services. (44)
108) High School/Secondary Diplomas and Certificates. (45)
109) History. (46)
110) Residency Programs. (47)

Q12 What is your current enrollment status?
111) Full-time (12 or more credits) (1)
112) Part-time (11 or fewer credits) (2)

Q13 The following are several factors that may have influenced your decision to enroll at Kirkwood Community College. Please rate how important each factor was in making this decision.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Extremely important (1)</th>
<th>Very important (2)</th>
<th>Moderately important (3)</th>
<th>Slightly important (4)</th>
<th>Not at all important (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learn new skills</td>
<td>113)</td>
<td>114)</td>
<td>115)</td>
<td>116)</td>
<td>117)</td>
</tr>
<tr>
<td>Training to get a job - currently unemployed (not working)</td>
<td>118)</td>
<td>119)</td>
<td>120)</td>
<td>121)</td>
<td>122)</td>
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<tr>
<td>Training to get a job - currently underemployed (job doesn’t meet education/training level)</td>
<td>123)</td>
<td>124)</td>
<td>125)</td>
<td>126)</td>
<td>127)</td>
</tr>
<tr>
<td>Advancement in my current field of employment</td>
<td>128)</td>
<td>129)</td>
<td>130)</td>
<td>131)</td>
<td>132)</td>
</tr>
<tr>
<td>Unsatisfied with current employment</td>
<td>133)</td>
<td>134)</td>
<td>135)</td>
<td>136)</td>
<td>137)</td>
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<tr>
<td>Personal growth and interests</td>
<td>138)</td>
<td>139)</td>
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<tr>
<td>Prepare for license or exam</td>
<td>143)</td>
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<td>Prepare for transfer to a four-year institution</td>
<td>148)</td>
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<td>Earn more money</td>
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</table>
Q14 Do you want to complete an associate's degree at Kirkwood Community College?
158) Yes (1)
159) No (2)

Display This Question:
If Do you want to complete an associate's degree at Kirkwood Community College? No Is Selected

Q15 What are your current educational goals?
- Complete a certificate or diploma program (1)
- Complete courses to prepare to transfer to a four-year institution (2)
- Complete courses without completing a program or transferring (3)
- Complete courses to prepare for an exam or certification (4)
- Other (Please specify) (5) ____________________

Q16 Section Two - Employment Background

Q17 What was your employment status prior to enrolling at Kirkwood?
160) Employed full-time (1)
161) Employed part-time (2)
162) Unemployed (3)

Condition: Unemployed Is Selected. Skip To: What is your current employment status?.

Q18 If previously employed, what were your annual earnings at that time?
163) Less than $10,000 (1)
164) $10,000 - $19,999 (2)
165) $20,000 - $29,999 (3)
166) $30,000 - $39,999 (4)
167) $40,000 - $49,999 (5)
168) $50,000 - $59,999 (6)
169) $60,000 - $69,999 (7)
170) $70,000 - $79,999 (8)
171) $80,000 - $89,999 (9)
172) $90,000 - $99,999 (10)
173) $100,000 - $149,999 (11)
174) More than $150,000 (12)

Q19 What is your current employment status?
175) Employed full-time (1)
176) Employed part-time (2)
177) Not currently employed (3)

Q20 Section Three - Future Employment Plans

Q21 After I intend to work:
178) Full-time (1)
179) Part-time (2)
180) Neither, I plan to transfer to another institution (3)

Condition: Neither, I plan to transfer... Is Selected. Skip To: End of Block.
Q22 What best describes your future employment plans?
   181) Continue to work with my current job and employer (1)
   182) Seek a promotion or apply for a different role at current employer (2)
   183) Look for a new job within the same career field (3)
   184) Look for a new job within a new career field (4)

Q23 What do you anticipate your annual earnings will be after completing your current educational objectives at the community college?
   185) Less than $10,000 (1)
   186) $10,000 - $19,999 (2)
   187) $20,000 - $29,999 (3)
   188) $30,000 - $39,999 (4)
   189) $40,000 - $49,999 (5)
   190) $50,000 - $59,999 (6)
   191) $60,000 - $69,999 (7)
   192) $70,000 - $79,999 (8)
   193) $80,000 - $89,999 (9)
   194) $90,000 - $99,999 (10)
   195) $100,000 - $149,999 (11)
   196) More than $150,000 (12)

Q24 Section Four - Demographics

Q25 What is your gender?
   197) Male (1)
   198) Female (2)
   199) Prefer not to answer (3)
Q26 What is your age?

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</table>
Q27 What is your resident status?
   248) Iowa Resident (1)
   249) Non-Iowa Resident (2)
   250) International Student (3)

Q28 Are you Hispanic/Latinx?
   251) Yes (1)
   252) No (2)

Display This Question:
   If Are you Hispanic/Latinx? No Is Selected

Q29 How would you identify your race/ethnic background?
   253) American Indian or Alaska Native (1)
   254) Asian (2)
   255) Black or African American (3)
   256) Native Hawaiian or other Pacific Islander (4)
   257) White (5)
   258) Two or more races (6)
   259) Race/ethnicity unknown (7)

Q30 What is your marital status?
   260) Married (1)
   261) Widowed (2)
   262) Divorced (3)
   263) Separated (4)
   264) Never married (5)

Q31 How many dependent children in your household?
   265) 0 (1)
   266) 1 (2)
   267) 2 (3)
   268) 3 (4)
   269) 4 (5)
   270) 5 (6)
   271) 6 (7)
   272) 7 (8)
   273) 8 (9)
   274) 9 (10)
   275) 10 or more (11)

Q32 How many miles do you live from [campus]?
   276) Less than 1 mile (1)
   277) 1 - 2.9 miles (2)
   278) 3 - 4.9 miles (3)
   279) 5 - 7.9 miles (4)
   280) 8 - 10.9 miles (5)
   281) 11 - 14.9 (6)
   282) 15 or more (7)
APPENDIX B. SURVEY INVITATION EMAIL

Dear Community College Student,

My name is Kelly Friesleben, and I am a doctoral candidate in the School of Education at Iowa State University. I am conducting a survey as part of the requirements of my PhD in Higher Education, and I would like to invite you to participate.

The survey collects information about the factors that influence a person’s decision to enroll at a community college, and asks questions regarding historical and current-educational and employment interests and pursuits. **You must be at least 18 years of age in order to participate.** Although you probably won’t benefit directly from participating in this study, we hope that others in the community/society in general will benefit by providing information to community colleges regarding this information.

Participation in the survey is voluntary and your responses will be anonymous. You do not have to complete the survey, and no one (not even the researcher) will know what your answers are. There are no known risks associated with participating in this study, please know you are able to skip any questions that you do not want to answer.

Click this link to participate in the survey:

[E-mail link]

Simply click on this address to go to directly to the survey. If the link does not work, copy and paste the above URL into the address bar of your Internet browser.

**Completion and submission of the questionnaire indicates your consent to participate in the study. You may print this email for your records as documentation of participation. It is estimated that it will take 5 minutes to complete this survey.**

By participating in the survey, you can choose to enter to win one of five - $10 Visa gift cards. If selected to win one of the gift cards, you will receive a notification email and the gift card will be mailed to you to the address provided.

We will be happy to answer any questions you have about the study. You may contact me at klf@iastate.edu, or my faculty advisor, Jan Friedel, at jfriedel@iastate.edu if you have study related questions or problems. If you have any questions about your rights as a research participant, you may contact the Office of Responsible Research at Iowa State University at (515) 294-1516.

Thank you for your time and consideration.

Sincerely,
Kelly Friesleben
Doctoral Candidate
School of Education
Iowa State University
APPENDIX C. INSTITUTIONAL REVIEW BOARD (IRB) APPROVAL

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

Date: 4/26/2017
To: Kelly Friesen
1831 Locust St
West Des Moines, IA 50265

CC: Dr. Janice Friedel
N247F Lagomarcino Hall
Dr. Yu Chen
N216 Lagomarcino

From: Office for Responsible Research
Title: Enrollment for post-baccalaureate reverse transfer students at Kirkwood Community College
IRB ID: 17-103

Study Review Date: 4/25/2017

The project referenced above has been declared exempt from the requirements of the human subject protections regulations as described in 45 CFR 46.101(b) because it meets the following federal requirements for exemption:

- (2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey or interview procedures with adults or observation of public behavior where
  - Information obtained is recorded in such a manner that human subjects cannot be identified directly or through identifiers linked to the subjects; or
  - Any disclosure of the human subjects' responses outside the research could not reasonably place the subject at risk of criminal or civil liability or be damaging to their financial standing, employability, or reputation.

The determination of exemption means that:
- You do not need to submit an application for annual continuing review.
- You must carry out the research as described in the IRB application. Review by IRB staff is required prior to implementing modifications that may change the exempt status of the research. In general, review is required for any modifications to the research procedures (e.g., method of data collection, nature or scope of information to be collected, changes in confidentiality measures, etc.), modifications that result in the inclusion of participants from vulnerable populations, and/or any change that may increase the risk or discomfort to participants. Changes to key personnel must also be approved. The purpose of review is to determine if the project still meets the federal criteria for exemption.

Non-exempt research is subject to many regulatory requirements that must be addressed prior to implementation of the study. Conducting non-exempt research without IRB review and approval may constitute non-compliance with federal regulations and/or academic misconduct according to ISU policy.

Detailed information about requirements for submission of modifications can be found on the Exempt Study Modification Form. A Personnel Change Form may be submitted when the only modification involves changes in study staff. If it is determined that exemption is no longer warranted, then an Application for Approval of Research Involving Humans Form will need to be submitted and approved before proceeding with data collection.

Please note that you must submit all research involving human participants for review. Only the IRB or designees may make the determination of exemption, even if you conduct a study in the future that is exactly like this study.

Please be aware that approval from other entities may also be needed. For example, access to data from private records (e.g., student, medical, or employment records, etc.) that are protected by FERPA, HIPAA, or other confidentiality policies requires permission from the holders of those records. Similarly, for research conducted in institutions other than ISU (e.g., schools, other colleges or universities, medical facilities, companies, etc.), investigators must obtain permission from the institution(s) as required by their policies. An IRB determination of exemption in no way implies or guarantees that permission from these other entities will be granted.