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IDENTIFYING COMMUNITY COLLEGE TRANSFER STUDENT CHARACTERISTICS ASSOCIATED WITH GRADUATION FROM A FOUR-YEAR INSTITUTION

A DISSERTATION APPROVED FOR THE DEPARTMENT OF EDUCATIONAL LEADERSHIP AND POLICY STUDIES

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Abstract

Transfer students represent a rapidly growing subgroup in higher education. Increasingly, students are beginning their degree-seeking journeys at community colleges with the intention of transferring to a four-year institution. However, the number of students successfully transferring is much lower than the number of students that had goals to transfer upon matriculation to community college (Jenkins & Fink, 2015). Empirical evidence indicates a discontinuation in education after students depart community colleges. In effort to remedy this decline in transfer matriculation rates, both community colleges and four-year universities are developing supports to streamline the transfer process; however, to create strong supports for transfer students, institutions must first understand the barriers faced by the transfer student population. Despite this increase in community college enrollment, there is little literature to explain poor matriculation rates from community colleges to four-year institutions. To begin to address this gap in the literature, this study explored the characteristics among community college to four-year institution transfer students associated with graduation, using data from a sample of college students from a 2013 cohort from a community college system in Oklahoma. Findings reveal that community college students transferring to 4-year institutions were more likely to complete their bachelor's degree in 6 years and more likely to have earned an associate's degree while at community college. Furthermore, enrollment intensity, earning an associate's in 3 years or less, and total semesters spent in higher education were are positively related to bachelor's degree completion while enrollment intensity, semesters enrolled in community college, and enrollment in development education courses were are positively related to associate's degree completion. Implications for policy and practice are discussed.

CHAPTER ONE:

INTRODUCTION

As the cost of higher education continues to rise, many Americans are turning to community colleges in pursuit of a degree. Community colleges across the United States serve over 40% of undergraduates (Bailey & Morest, 2006; Dougherty & Townsend, 2006; Grinder, Kelly-Reid, & Mann, 2018). However, the transition from a community college to a four-year institution is often a confusing journey; a journey which many students fail to navigate (Handel, 2007; Ivins, Copenhaver, & Koclanes, 2017). In Spring 2019, a community college student from a midwestern state was asked what surprised her during her transfer process to a four-year institution. She replied, "What surprised me the most was that the colleges do not talk. I cannot ask an advisor at one school to tell me how to go through the whole process. I had to run back and forth trying to gather the information I needed."

Sadly, this student's experience is not an isolated incident. Collaboration between community colleges and four-year institutions is often poorly executed or non-existent. Rhine, Nelsen and Milligan (2000) argued that the lack of coordination exhibited between the sending and receiving institution contributes to transfer student failure to complete degree plans on time. Furthermore, Gordon Gee, president of Ohio State University described two- and four-year institutions as rivals rather than players on a single team (Von Drehle, 2009) and Margaret Spellings (U.S. Department of Education, 2006), former United States Secretary of Education, urged postsecondary institutions to create a common alignment across the nation. Transfer students consistently report finding it difficult to maneuver through the transfer process and often feel alone and lost in the transition (Handel, 2007).

Transfer students in higher education are becoming a closely watched demographic as transfer student enrollment increases across the nation. For example, The Integrated Postsecondary Education Data System, or IPEDs, (2016) reported a 29% rise in community college attendance between 2000 and 2010. Furthermore, an increase in transfer student enrollment in community colleges is expected between 2014 and 2025 (Integrated Postsecondary Education Data System, 2016). With transfer populations skyrocketing, community college and four-year institutions may be forced to address student transition problems in order to maintain enrollment numbers.

Enrollment at community colleges can be seen as a more appealing and affordable option due to cost of tuition, ease of access, demographic convenience, and lower admission requirements. In fact, IPEDs reported that in fall 2017, 6.1 million students were enrolled at public two-year institutions. These data indicate rapid growth of transfer students and highlight the potential importance of the development of a streamlined pathway from community college to four-year institution. However, despite increasing enrollment, few universities and community colleges have collaborated to ensure success of transfer students. About 80% of community college students indicate their desire to earn at least a bachelor's degree; however, only 29% of community college students transfer to a four-year institution within six years (Shapiro, Dundar, & Huie, 2018). The lack of community college and four-year institution collaboration can have a significant impact on student transfer, retention and completion and produce a negative experience for students that are trying to navigate the process of institution change (Phelps & Prevost, 2012; Rhine, Milligan, & Nelson, 2000).

Transfer students have specific needs which are different than traditional students and institutions, both community college and four-year, must develop supports to meet this growing

need (Stahl & Pavel, 1992). Today's community college and transfer student cohorts contain more adult learners, more students attending with a part-time enrollment status, and more students sensitive to the rising cost of college tuition than ever before (Shapiro et al., 2015). These specific characteristics make the transfer student population unique, as they are faced with different demands than those of more traditional students. Even the most academically prepared students do not successfully transfer, so it may be concluded that community college academic achievement is not necessarily the most predictive indicator of successful four-year institution transfer.

In addition, transfer students often live off-campus, have work or family responsibilities, while also striving to survive the academic demands of college. In years past, the majority of students successfully completing a bachelor's degree only attended a four-year university and attended full-time (Tinto, 2002). However, as the current college student demographic has changed, that is no longer the case. For current college transfer students, there is a delicate balance of academic and social integration; a balance that can lead to transfer failure or four-year institution attrition. Many researchers have coined this phenomenon as *transfer shock*. Transfer shock refers to student failure in matriculation from a community college to a four-year institution or a dramatic decline in academic GPA after making the transfer to the senior institution (Cejda, 1994).

Enrollment intensity, such as full-time or part-time enrollment can also have an impact for students that are preparing for transfer from their community college, but also after they have matriculated. Campus environments are often less supportive of transfer students and supports are typically designed for the full-time student (Kuh, 2000; Kuh et al., 2001; National Survey of Student Engagement, 2004). Additionally, part-time students generally spend less

time on campus due to outside and family responsibilities. Therefore, they may feel out of touch or uninformed of the college community, announcements, and information. Such feelings may also be experienced by adult learners, or students over the age of 24. As adult learners often experience different motivation for attending higher education, they may have varying needs and support methods compared to the traditional student (Morstain & Smart, 1997; Wolfgang & Dowling, 1981).

While all transfer student barriers are yet to be eliminated, research shows that one of the greatest indicators of transfer success is persistence (Cejda, Rewey, Kaylor, 1998). A key factor in determining student persistence can be access (Tinto, 2002). If access into an institution or the transfer from a community college to a four-year institution is too difficult, persistence to completing a bachelor's degree decreases. Tinto (2002) found that students are more likely to persist and graduate at institutions that provide clear and consistent messaging surrounding education requirements, program choices, and future career goals. Furthermore, academic, environmental, and social factors can affect student persistence in the transfer transition and can be as critical as pre-matriculation indicators such as family background, secondary school experiences or individual attributes (Pascarella, 1980).

Clayton Christensen, a Harvard Business School professor, predicts that half of the nation's colleges and universities will close or merge in the coming decade (Christensen, 2017). In the age of technology, computer based or online education is a more convenient and cost-effective option and traditional "brick and mortar" institutions are struggling to compete. Sources such as Purdue University Global, Linked In, and even Google provide easy access to college courses online and are accessible to students wherever internet is available. Higher

education institutions are faced to reexamine their business practices as they compete for fewer students in a highly competitive education marketplace.

As a result of the steady decline in traditional aged students (Astone et al., 2015), it is expected that non-traditional students will make up the college-attending demographic majority in the near future (Snyder, De Brey, & Dillow, 2016). The U.S. Department of Education utilized definitions from researchers to define non-traditional students as meeting one of seven characteristics: delayed enrollment into postsecondary education; attends college part-time; works full-time; is financially independent for financial aid purposes; has dependents other than a spouse; is a single parent; or does not have a high school diploma. Historically, institutions, especially four-year institutions, have designed their processes and procedures for traditional students, or students who matriculate immediately following high school graduation (Brock, 2010; Choy, 2002b; Horn, 1996; Kim, 2002; Taniguchi & Kaufman, 2005.)

Furthermore, decreased funding and large budget cuts, on both national and state levels, has caused tuition rates to increase, making higher education a near-unaffordable expense for many Americans. As a result, institutions have been forced to eliminate student support services and other expenditures as cost-saving measures. Overall, the cost of higher education tuition at four-year public colleges has risen by 28% since 2007 (Mitchell, Palacios, & Leachman, 2015). Researchers at Georgetown University predicted that by 2020, 65% of all jobs will require postsecondary education, while currently, 24% of all jobs require at least a bachelor's degree (Carnevale, Smith & Strohl, 2013). Under these circumstances, the retention and successful transition of students from a community college to a four-year institution may not only be important to the enrollment rates of higher education institutions, it may also be critical to the

development of the United States workforce and economic future as employer skill requirements and skills gaps are constantly changing (Schray & Sheets, 2018).

In an effort to bridge the gap between community college and four-year institutions, many community colleges across the country are beginning to design supports specific to transfer students such as student success centers, transfer counselors and transfer-specific academic advisors. Currently, only 26 states have passed legislation to allow community colleges to offer bachelor's degrees (McCarthy, 2019). While this offering could allow for ease of access for many minority or non-traditional students, four-year institutions question rigor and quality of bachelor's degrees offered at community colleges. However, the Community College Research Center reports that in 2016-2017, 38% of the undergraduate population attended a public two-year college (Ginder & Kelly-Reid, 2018). Since nearly 40% of undergraduates are already attending a two-year community college, this may suggest that adding a bachelor's degree at a community college would provide ease of access, as this eliminates the transition barrier entirely. For example, in the state of Wyoming, the University of Wyoming is the only public four-year institution in the state. Students located at a distance far from the institution can face many hardships such as location, transportation, and financial constraints. Although, offering bachelor degrees in rural community college locations, is a fairly new concept, there is little research on noted successes through this program. However, this can be identified as a potential contribution toward a national increase in bachelor's degree completion for students who begin at a community college.

Statement of the Problem

Four-year higher education institutions have become increasingly concerned about the success of community college transfer students, especially as they have become a large

proportion of the overall undergraduate student population (Cross, 1968; Thornton, 1972). Because of increased enrollment at community colleges, four-year institutions are relying on community colleges more than ever. There has recently been a push for institutional collaboration, when in the past, it was customary that institutions functioned independently and communicated minimally. With the changing demographic between community colleges and four-year institutions, there has been more of an emphasis on articulation agreements, regular and consistent communication, and joint efforts to streamline the transfer process for students. However, before policies and procedures can be written, characteristics of community college transfer students that hinder persistence and graduation at the 4 year institutions to which they transfer must first be identified.

The literature suggests that transfer students are a unique subpopulation of students with unique needs and transfer students may have heavy responsibilities outside their academic life (Brooks, 1995; Hermon & Davis, 2004; Pelletier, 2010; Stahl & Pavel, 1992). For instance, responsibilities may include dependents, spouses or full-time jobs (Pelletier, 2010; Stahl & Pavel, 1992). Unfortunately, transfer students are often forgotten and ignored regarding orientation, advising, and other campus support services (Sandeen & Goodale, 1976). Therefore, institutions may benefit from individualized supports such as affinity groups or personalized academic coaching, for these students to help ease the transition process. If institutions better understand student characteristics that help or hinder degree attainment, they will be better able to structure supports around these characteristics. While there is much research is supporting students transitioning out of a community college setting as well as research on enrollment of transfer students at four-year institutions, there is little research which

focuses on the transition from one institution to another because of the often fragmented process and lack of coordination between sending and receiving institutions.

Study Purpose and Research Questions

Transfer student barriers and the understanding of unique transfer student characteristics which are associated with four-year institution graduation is a clear gap in the literature. Unique transfer student characteristics may include: part-time enrollment status, full-time employment, family obligations, or other characteristics not faced by traditional students. While studies have suggested collaboration, articulation agreements, inter-institution communication and other specific supports designed for transfer students are solutions to the challenge of community college transfer student success, there is little research which attempts to explore the sources of transfer student failure upon entering the four-year institution. To begin to address this gap in the literature, the purpose of this study was to explore the characteristics among community college to four-year institution transfer students associated with graduation, using data from students attending a large community college system in Oklahoma. It is hoped that this study might help inform higher education administrators and policy makers' efforts to design appropriate supports that could lead to better success for this underserved college-going group, but also might lead to a higher rate of matriculation to four-year institutions by community college students. Thus, the study was guided by the following research questions:

1) What factors predict likelihood of bachelor's degree graduation for community college transfer students?
2) Is there a difference in the likelihood of degree attainment (both bachelors and associates) depending on transfer institution type?

Study Significance

It is hoped this research could have broad implications for research, school policy, and transfer student success. In using data from a large community college system in a large metropolitan area, this information is first applicable to other similar size community college institutions. Further, it is hoped that this study would spur further study into the correlates of bachelor's degree completion among community college transfer students. As a result, it is hoped that higher education institutions to which these findings apply will have more information about how to target specific supports to meet the needs of this specific cohort of students. Institutions will be able to utilize research on the transfer transition to develop policy and procedures around transfer success. This work is essential because only 16.7% of students who started at a community college in 2013 completed a degree at a four-year institution within six years (Sharpiro et al., 2015).

As the cost of higher education continues to rise, most students are looking for ways to make college more affordable. Oftentimes, transferring from a community college to a four-year institution results in a loss of credits, which equates to a loss of time and money. The Quarterly Report on Household Debt and Credit reported student loan debt in the United States is $1.48 trillion, of which nearly 10% of that total is in serious delinquency (Federal Reserve Bank of New York, 2019). Increased collaboration between institutions spurred by the findings of this study could potentially assist in decreasing student debt, which would be beneficial to both students, the United States government, and the economy as a whole.

While it is clear that the higher education landscape has been in constant change since conception, it can be argued that the institutional mission of community colleges has been the most rapid, as they are forced to adapt to social, demographic and economic shifts (Clowes &

Levin, 1989). If transfer research is able to keep up with the fast-paced shift of college student demographics, institutions may be able to identify characteristics associated with graduation, making higher education a more attainable goal across the country. Development of policies and procedures by community colleges and four-year institutions around the support of community college transfer students may help to better support them and, as a consequence, the families and communities to which they belong.

CHAPTER TWO:

REVIEW OF THE LITERATURE

The purpose of this literature review is to better understand what we know about the higher education transfer process in an attempt to understand the characteristics among community college to four-year institution transfer students associated with undergraduate success. While much literature exists on transfer student supports, descriptive data suggests there are poor transfer rates nationally from community colleges to four-year institutions and little evidence as to the barriers and/or reasons for these low matriculation rates. In this chapter, a review of the literature is presented to include the following: 1) a history of community colleges and transfer students 2) college student demographics, trends, and the American economic outlook 3) transfer student support practices and 4) transfer student barriers.

A History of Community Colleges and Transfer Students

Today, community colleges are one of the largest education enterprises in the United States and they have become so by providing open-access educational opportunities to low-income and other underrepresented groups (Handel, 2009). The concept of two-year colleges began in the late 19th century and were originally designed for students seeking an associate's degree in arts or sciences. Previously known as junior colleges, President Truman supported junior colleges in *The President's Commission on Higher Education*, because they increased access to education during a time of higher education expansion and they served as cost-effective option to students (Gilbert & Heller, 2010). Community colleges were often structured within public high schools and marketed as the 13th and 14th grades. Originally, junior colleges were not designed to prepare students to transfer to a four-year institution, they were meant as an opportunity for those that were not seeking a bachelor's degree, and a way to preserve the

prestige and limit access to four-year institutions in the name of social efficiency (Beach, 2012). Furthermore, it was proposed that junior colleges would relieve universities of the burden of teaching general education requirements and relinquish lower-division coursework (Cohen & Brawer, 2008). Generally, community colleges were designed to provide low-cost programs for low-ability, part-time, minority, and low-income students who probably would not have otherwise sought out opportunities in higher education at all (Cohen & Brawer, 1982).

By 1930, there were 440 junior colleges in 45 states with a total enrollment of approximately 70,000 students (Cohen & Brawer, 2008). As course offerings grew in popularity, junior colleges became stand-alone institutions and primarily offered vocational, continuing education, and job-skill courses with a focus on serving the community and workforce. Aided by high birth rates in the 1940s (Cohen & Brawer, 2008), enrollment expanded, along with recognition of the academic coursework and rigor, the name "community college" became a more fitting title. During expansion, a common purpose was established; community colleges promised to serve and meet community needs by providing adult education and educational, recreational, and vocational activities and vowed to make cultural facilities available to the community (Hollingshead, 1936). Community involvement and service are at the forefront of the community college mission to be an open education access point for all members of the community.

In the 1960s, there was a dramatic increase in community college attendance and a shift in higher education admission policies as they changed from meritocratic to egalitarian. From 1955 to 1999, community college enrollment grew from only 17% of college students attending community college to 44% (Kane & Rouse, 1999). This increase can be largely attributed to the flexible nature of a community college and the ability to attend part-time. Caused by liberal

enrollment practices, part-time attendance allowed, and even does still now, an additional student audience to attend college; many students are unable to attend if they must maintain full-time enrollment status. This makes community college an attractive option for students with jobs, families, and other responsibilities outside of academia. Conversely, family and other outside-of-school responsibilities contribute to high attrition rates of community college students (Bailey, Jeong, & Cho, 2010; Horn & Nevill, 2006; Tinto, 1987).

Community college expansion had a polarizing impact on the entirety of higher education as community colleges were becoming a first point of access for students seeking bachelor's degrees. By the 1970s, 40% of all first-time, full-time freshmen were enrolled in community colleges across the nation (Cohen & Brewer, 2008). As a result, both two- and four-year institutions were forced to reexamine their transfer processes. Joseph Cosand, former U.S. Commissioner of Education, observed that community colleges, in the 1970s, focused on questions related to their overall missions and consistent messaging (Cosand, 1979). For example, different perspectives and priorities of what community colleges should offer, varied at the local, state, and national levels (Nespoli & Martorana, 1984). During this time, and continuing into the 1980s, prioritization and supports were built for the growing transfer student population. Both community colleges and four-year institutions were forced to create a new culture and adopt new acceptance practices; practices that differed from the very foundation they were built on.

Two-year institutions provide such a large-scale of open-access opportunity, community colleges must act as multivalent institutions in preparing students for collegiate, career, or continuing education in providing vocational programs, literacy programs, adult education, and preparing students to transfer to a university system (Cohen & Kisker, 2010; Dougherty

&Townsend, 2006). These three facets of a student's journey are intertwined and one student may fit into one, or all three, categories throughout their educational journey. However, critics argue that institutions are blurring the lines between collegiate, career, and continuing education and each set of students requires a unique type of support (Brooks, 1995). Institutions often struggle to support students transferring from a community college to a four-year institution because of their diverse experiences and precisely because they do not follow a narrowly-defined path of community college to four-year institution matriculation. Instead, students commonly pause before, during, and after attending community colleges (Fredrickson, 1998), making it difficult for institutions to facilitate a smooth transition from one institution to another.

Community colleges may once have been seen at the penumbra of higher education, however, with an increase of enrollment, they are now serving as a critical entry point for many students in higher education. Community colleges, in conjunction with the support and collaboration from four-year institutions play a key part in driving the national education degree attainment and the American workforce, as their primary goal is to provide the best and most economical form of education (Carlan & Byxbe, 2000). With critical shifts in the college student demographic, institutions may shift priorities and strategies to cater to current college student characteristics and trends.

Current College Student Demographics, Trends, and the American Economic Outlook

As the college student population and college environment changes, the choice to attend a two-year institution to begin one's postsecondary education is becoming increasingly popular. Factors driving that choice can include proximity to home, flexible course schedules, and low tuition (Chen, 2018). Transfer students are becoming the new "normal" and, as the Western

Interstate Commission for Higher Education suggests, the term “non-traditional student” is becoming increasingly outdated. In fact, as few as 16% of college students today fit the traditional student mold, defined as 18-20 years old, financially dependent on parents, full-time college enrollees, and living on campus (Pelletier, 2010). In examining the characteristics of today’s students, non-traditional is the new traditional and institutions are being forced to adapt.

However, tailoring services to a particular student demographic is difficult, as current students have varying needs and characteristics. For example, students may work full-time or part time, have children or other dependents, or could perhaps be coming off active duty (Pelletier, 2010). As many students are beginning higher education at a community college, the higher education system is faced with improving the transfer process. Community colleges disproportionately enroll students from underrepresented groups and those groups are expected to grow dramatically in the next two decades (Handel, 2007). If community colleges and four-year institutions fail to meet market demand, they may fail to maintain the enrollment numbers needed to support the institution.

Along with a shift in student characteristics, education technology is being used more than ever before. College campuses feature high-tech innovation labs, digital campsites, and technology utilization in the classroom is a regular norm. Institutions are utilizing technology as a way to leverage and meet the needs of students seeking flexibility and interactive learning. Even campus libraries have been forced to adapt to technology utilization by downsizing the size of their physical collections and working to enhance online databases as a paperless alternative. As a result of accessible technology, online courses have become an attractive option for students seeking a more flexible academic alternative (Clinefelter & Alanian, 2015; Serdyukov & Serdyukova, 2006). In a 2011 study conducted by Pew Research Center, 46% of

survey respondents that have taken a class in the last ten years have participated in an online course (Parker, Lenhart, & Moore, 2011). An additional survey of 1,500 online college students, found that a large segment of college students will never set foot in a classroom and approximately 30% of respondents stated they would not continue in their studies if classes were not available online (Clinefelter & Alanian, 2015). Furthermore, technology can serve as a collaboration tool between two- and four-year institutions to facilitate communication in regards to student transfer. Software systems have the technology to link community college and university data across institutional systems to address questions of credit mobility (Hodara et al, 2016).

Many Americans are informed of higher education struggles by means of national news and political figures. All levels of education, K-12 through universities, are scrutinized and are often at the center of national debates and discussions within the political landscape. From local school boards to presidential elections, a promise of education reform or lower tuition is a topic discussed frequently. This increase in interest and intervention by the American government led to impactful funding opportunities such as the 2009 American Graduation Initiative, which provided billions of dollars to support community colleges, and the America's College Promise Act of 2015, which provided community college tuition waivers for eligible students (Diaz, 1992).

Funding and education support are popular discussion topics because education is something that impacts nearly every American in the country and is seen as a window of opportunity to many. During the twentieth century, higher education has become a primary gateway for the middle class to advance socially and economically (Eckel & King, 2004). However, community colleges are largely made up of non-resident, part-time, older, non-white,

and working students; this population of students is often hard to study because they often spend less time on campus and are less involved (Terenzini & Pascarella, 1998). Unfortunately, educational policy makers generally focus their attention on widely-researched and evidenced groups, such as the traditional college student, which makes national change difficult, as policy reform may not keep up with the fast paced student demographics in higher education. Higher education policy makers and leaders could focus on credit mobility among institutions, specifically from students for historically disadvantaged backgrounds to increase earned bachelor degree rates among students beginning at a community college (Hodra et al., 2016).

Pursuit of an increase of financial earnings, employability and social mobility are among some of the most popular reasons for higher education attendance (Hentschke, Tierney, & DeFusco, 2014). The U.S. Department of Education (2006) reported that 90% of the fastest-growing jobs in the new knowledge-driven economy will require postsecondary education. In support of these claims, a 2017 survey conducted by the U.S. Bureau of Labor Statistics, data consistently indicated that higher education degree obtainment was valued and equated to greater earnings. This same survey showed that American workers over the age of 25 with an associate's degree have 16% higher median weekly earnings than counterparts with only a high school diploma; those with a bachelor's degree have a 48% higher median weekly earning compared to a high school diploma, which can equate to an average of $2.1 million more earned by a bachelor's degree holder as compared to a worker with a high school diploma (Synder, 2005; Torpey, 2018). Similarly, in 2003, the median yearly income for an American worker with only a high school diploma was $30,800, compared to $37, 600 for those with an associate's degree, followed by a $49,900 median for those with a bachelor's degree (The College Board, 2005).

However, financial earnings, as a result of an earned degree, still remain lower for women and nonwhites because of labor market discrimination (Beach, 2012). The Council for Adult and Experiential Learning reported in 2008, that the United States ranks tenth among countries in the Organization for Economic Co-operation and Development in the percentage of young adults, aged 25-34, with a postsecondary credential (Council for Adult and Experiential Learning, 2008). However, even with such a ranking, only 34% of the adult workforce in the United States has earned at least an associate's degree (Ritt, 2008). As higher education broadens its scope in equity and the education-for-all mission, the political landscape in providing sociopolitical equity in economic development must move at the same pace.

Furthermore, the more credentials in higher education earned, the lower the unemployment rate. Those with a high school diploma have a 4.6% unemployment rate, followed by 3.4% among those with associate degrees, and rates reach as low as 2.5% for those with earned bachelor degrees (Torpey, 2018). The Center of Education and Workforce estimated that by the year 2020, 65% of job openings will require at least some college or an associate's degree (Carnevale, Smith, & Strohl, 2013). These findings suggest the high value of college education for future employment, especially in predicted fastest growing occupations such as STEM and healthcare (Carnevale, Smith, & Strohl, 2013).

Low transfer rates are considered a common problem among community colleges in the United States (Doughtery, 1992). Four-year institutions are beginning to take some responsibility regarding community college transfer as it directly affects admission rates into their own institutions. Institutional collaboration is an example of how community colleges and four-year institutions can work together to remedy this situation. As such, there is projected

growth in employers' demand for individuals with bachelor's degrees making community college support in transitioning students to four-year institutions vital (Lacey & Wright, 2009).

While community colleges are designed for those seeking varying levels of education credentials, workforce and technical preparation will continue to remain a foundational mission of the community college. Federal and state legislators, as well as business and industry stakeholders, strongly support workforce education (O'Banion, 2019). Degree completion may still serve as the ultimate goal in college attendance, however many policymakers are urging institutions to offer quick credentialing and programs to meet labor force needs. Community colleges, because of accessibility and affordability, maintain responsibility for America's economic and employment rebound in providing workforce education (Fain, 2014). Because of a highly competitive workforce environment, the current gap in college attainment must be addressed in order for the United States to maintain a strong economic position in the global marketplace (Ritt, 2008).

Although the debates about higher education in public policy carry many benefits, it can also alter perceptions of the entire higher education system and contribute to negative stigmas. In 2017, Pew Research Center conducted a survey of adults which included a U.S. population-based sample of over 2,700 respondents. Findings from this survey found that Republicans feel more negatively toward college professors as compared to Democrats and Republicans have grown increasingly negative about the impact of higher education institutions on the American economy (Kaufman et al., 2016). Americans reported the expressed negative feelings stemmed from high tuition costs, not receiving workforce skills through college courses, institutions protecting students from views they might find offensive, and professors bringing their political and social views into the classroom (Brown, 2018). Despite these negative feelings, 80% of

adults believe that a college education is more important today than it was 10 years ago, however, two-thirds of those respondents say that affording college is even harder now (College Board, 2005).

While community colleges are attracting students because of affordability and access, two-year institutions can also be viewed as an inferior alternate to a four-year institution (Handel, 2007). Community colleges often have a reputation of offering a lower-level of academic rigor, and enrolling and graduating students that lack academic skills (Handel, 2007). These assumptions may stem from the community college model at its inception, and public perception has not kept up with the modernization and reform of the American community college. Because community colleges are often seen as a single rung on a ladder, they are often faced with fighting the stigma that a community college is less than, or of lower importance, than a four-year institution or merely a stepping stone on the path to university. Evidence indicates that community college students who transfer to four-year institutions have equal-to-higher graduation rates as students who enrolled right out of high school (Glynn, 2019).

Transfer Support Practices

To recruit students to first attend a community college, many offer incentives such as lower tuition, open-access admission, or serve students that may have not met the admission criteria for a four-year institution (Fike & Fike, 2008; Fusch, 1996). These incentives, especially lower financial costs, make community colleges an attractive place to begin a bachelor's degree as the cost of college tuition continues to rise. However, a nation-wide problem has been identified in the area of transfer retention and transfer student bachelor's degree attainment. While intention to earn a bachelor's degree among community college students remains high at over 80%, in actuality, only about a quarter of those students end up transferring and only 17%

complete a bachelor's degree (Bailey, Jaggars & Jenkins, 2015). Community college students generally strive to earn a bachelor's degree to earn more money and hold a higher-level job (Fredrickson, 1998). Without institutional supports that directly work to improve the transfer process for students using recent research on those characteristics which lead to degree attainment, transfer students may continue to fail to matriculate, which could lower the amount of earned bachelor's degrees across the country, particularly for those students from underrepresented groups that are overrepresented at community colleges.

While the transfer mission was not the primary goal of community colleges in their inception, with the growing community college population, both two- and four-year institutions have been forced to develop policy to support this trend. The attrition rate among first to second year students in higher education is 41% with a 34% persistence to degree rate; these results indicate that institutions must heavily focus on student supports through first examining barriers to student retention (ACT, 2007). Supporting transfer students can help institutions cope with marginal funding and decreasing enrollments across all higher education entities (Bogart & Murphey, 1985). Students are increasingly beginning at a community college due to smaller class sizes and personal attention from faculty and staff which allows students, especially first-generation or students from low socioeconomic status, to feel confident and to be successful at a four-year institution (Piland, 1995). Therefore, students that feel underprepared or need to fine tune academic skills before visiting a university, may first be more academically successful in a community college setting.

Additionally, community colleges generally have an education-for-all message and mission. Underrepresented student populations that historically have had limited access to higher education are now more likely to attend college and their rate of enrollment growth

outpaces majority students (Kalogrides & Grodsky, 2011). As the college student population continues to become more diverse, it is less likely that a single dominant approach or support will aid all students (Terenzini & Pascarella,1998). This change in student demographics may necessitate a complex system of support structures to allow for the unique needs of individual students to be taken into account.

Articulation Agreements and Policy

Kintzer (1973) defined articulation as "the method or process of joining together." In higher education specifically, articulation agreements are a primary form of institutional collaboration and openness regarding transferable credits. Articulation agreements often pose as statewide policies, or agreements, between institutions outlining what courses can be transferred for equal credit. Furthermore, these agreements between community colleges and four-year institutions are a way to combat the loss of credits for students and can serve as an effective support for students seeking to transfer credits across institutions. Articulation agreements between community colleges and four-year institutions were created to increase attendance and enrollment among postsecondary institutions and to decrease uncertainty concerning transfer. Community colleges found that articulation partnerships aid in recruiting more qualified students if their students are able to recognize that credits will be transferable toward a baccalaureate degree (Bogart & Murphey, 1985).

Four-year institutions also find these partnerships beneficial for enrollment as they can seamlessly receive community college students' course credits, gaining access to a broader student population (O'Meara, Hall, & Carmichael, 2007). However, articulation agreement definitions can vary by institution and the approach to these policies can lead to different credit transfer practices (Simone, 2014). These programs vary widely with different mechanisms and

measures for student transfer through institutions and academic programs (Ignash & Townsend, 2000; Kintzer & Wattenbarger, 1985). There are 2+2 systems that guarantee prerequisite coursework transfer; in comparison, credit equivalency systems also guarantee prerequisite coursework transfer, but are much more specific into which program courses are accepted. Finally, there are institution-driven systems that outline a clear path of courses to be taken at a community college for direct transfer into a specific four-year institution major (Hodara et al., 2016).

Students who begin higher education at a community college before transferring to a four-year institution often experience a penalty centered around credit accumulation or loss and risk of drop out (Long & Kurlaender, 2009). Articulation agreements aim to increase clarity in the transfer process and, therefore, increase enrollment and fluidity between different types of institutions. An articulation agreement should clearly outline transferable credits from one institution to another and include recommendations for specific courses to be taken at a community college to reduce hours needed at a four-year institution. The formality of these procedures has increased over time when the nation observed a decline of transfer students in the 1970's (O'Meara, Hall, & Carmichael, 2007). Informal processes lacked structure in credit transfer and a clear path for career preparation (Menacker, 1975). Formal articulation agreements between institutions leave less room for inconsistent transfer and credit loss. As institutional collaboration was encouraged, beginning in 1971, four states led the articulation agreement charge; Florida, Texas, Georgia, and Illinois. Today, every state in the United States has some form of student transfer agreements in hopes to provide a more seamless transfer experience (Anderson, 2018).

In 1997, the University of California Chancellor signed a Memorandum of Understanding, or articulation agreement, between all institutions in the California higher education system, including both community colleges and four-year institutions (California Community Colleges Chancellor's Office, 1999). The agreement between these state institutions was intended to strengthen the transfer process in the state of California and support underrepresented students in bachelor's degree obtainment. From 1998 to 2005, the University of California system saw a 9% enrollment increase in underrepresented groups, an increase of transfer students to the most competitive colleges in the system like Berkeley, UCLA and the University of San Diego, and an overall 4% enrollment increase for community college to four-year institution transfers (Handel, 2007).

Another major roadblock in the transfer process is the transfer of credits from a community college to a university. This hurdle is often only discovered when students are exploring their transfer options and then realize transferring their credits would be a problem and not accepted by the receiving institution; a realization that often happens after they have already begun classes. A recent study conducted by the Community College Research Center (2015), found that fewer than 60% of community college students were able to transfer most of their credits, and about 15% transferred almost no credits. Students who transferred almost all of their community college credits were 2.5 times more likely to earn a bachelor's degree than those who transferred fewer than half their credits (Monaghan & Attewell, 2015). Additionally, even when credits are transferred, they are not always accepted as degree granting courses and instead cross over as electives. While institutions may technically approve a transfer as credits, the credits will be assigned as elective credits; credits that do not count towards a degree requirement (Hodara et. al, 2016). Since these electives do not count towards degree

completion, a student may not transfer in at junior-level status as expected. Overall, transfer students lose and average of 13 credits and 39% of students lose all credits earned when transferring institutions (Simone, 2014). Credit loss is a major factor that can deter community college transfer students from bachelor's degree attainment.

Community colleges were built on the mission to provide service, training, and education to the community (McDuffie & Stevenson, 1995; Wattenbarger & Witt, 1995) and, over time and with an increase of students seeking transfer for bachelor degree completion, articulation agreements were established to streamline the transfer process. Articulation agreements are essentially designed to provide greater student access in providing students with more options and pathways to degree completion (O'Meara et al, 2007). While such agreements can prove to be beneficial, writing and maintaining these agreements can be a tremendous amount of work and can deter institutions from developing these systems.

Pathways and Degree Mapping

Many students are unable to cope with the rapid change in environment, processes, and social structures when transferring from a community college to four-year institution. Some community colleges are now offering four-year degrees or even dual enrollment at both a community college and a four-year university simultaneously. For example, in Texas, two Blinn College campuses have partnered with Texas A&M. During a students' first two years at Blinn College, students are exposed to Texas A&M professors, campus visits, and travel for football games. The idea behind this model is that transfer shock will be lessened as students are exposed to a new institution slowly overtime instead suddenly (Gose, 2017).

However, customizing the student experience and defining pathways for transfer students can often be a challenge as student enrollment at a community college, prior to

transferring to a four-year institution, can be very brief—as little as one course taken—or it can be two or more years (National Student Clearinghouse Research Center, 2018). Seventy-seven percent of students beginning their education at a community college intend to transfer to a four-year institution in pursuit of a bachelor's degree according to a study among first-time community college students conducted in 2011 (Horn & Skomsvold, 2011).

Degree mapping is a developed support that can provide clarify regarding the path to graduation. Degree mapping is a process that serves as a guide or roadmap to inform student of courses that are specific to each degree and major of study (Ritt, 2008). These maps allow students to be better informed of classes to be applied toward a specific major or even courses counted as transfer credit. The degree map is a tool that is designed, in nature, to be specific, however, it also allows flexibility to account for student life changes. Degree map discussions should take place at the time of enrollment to ensure students stay on track and do not take unnecessary course work.

Transfer Student Demographics and Barriers

To date, research surrounding transfer and nontraditional students has primarily focused on student support implementation. However, lack of understanding of unique characteristics and the lifestyle of transfer students begs the question whether or not community colleges and four-year institutions can adequately meet student needs through academic programs and appropriate support services. Higher education is replete with complex barriers such as financial barriers, expectation gaps in learning between high school and college, and unclear student pathways among institutions of higher learning (Ritt, 2008). Furthermore, student demographics such as age, enrollment intensity, and gender can attribute to perceived barriers in higher education and may have an influence on bachelor degree obtainment. The relationship between

student barriers, educational attainment, and use of support services is not often studied (Bauman et al., 2004). This section of the literature review will cover the institutional barriers and student characteristics that may contribute to community college to four-year institution student dropout.

Articulation Agreements

Articulation agreements may be an avenue for institutions to provide more clarity and information surrounding the transfer process and can be structured as a student support, although, in some cases, researchers have reported that poor implementation and weak design of these policies can actually create a barrier to transfer for students; an unintended result of the original intention (Anderson, Alfonso, & Sun, 2006). 2+2 agreements advertise an agreement of two full-time years completed a community college, plus two full-time years at a four-year institution will equal enough credits to earn a bachelor's degree. In reality, time at the four-year institution is likely two or more years (O'Meara et. al, 2007). Articulation agreements often require a student to take specific approved courses to transfer into an identified degree. However, students commonly experience uncertainty about their major and destination institutions, which is one of the primary reasons for credit loss (Hodara et. al, 2016). In an ideal situation, students would have a very clearly defined path with a specific major and transfer institution in mind, however, this limits the path to self-discovery and career path exploration that is to be expected in the early years of college. Eliminating barriers to avoid student accumulation of excess elective credits and the avoidance of earned credit loss may support community college students and lead to less time to degree.

Articulation agreements can take much time to develop and require regular updating and monitoring. Although the term articulation agreement is becoming more common among

university administrators and legislatures, this term is still unfamiliar to students and not well advertised. A recent study conducted by the Office of Program Policy Analysis and Government Accountability (2010) found that nearly 70% of Florida students who had earned an associate degree but did not apply to a state university were either not aware of the state articulation policy or did not understand its provisions. While articulation agreements are good in theory, if students do not understand the process or how to properly read the agreement, they serve as no benefit to the students or transferring institutions. Overall, the complexity of the development and maintenance of articulation agreement development is a barrier for the institution and that institutional barrier may carry over to affect graduation rates as a whole.

Adult Learners

In higher education, scholars generally refer to traditional students as students between the ages of 18 and 22 who have recently graduated from high school, and are full-time undergraduate students (Stokes, 2006). In actuality, only 16% of the post-secondary population meets those characteristics and proportion of undergraduates who are adults 25 years or older continues to increase (Buaman et al., 2004; Hamil-Luker & Uhlenberg, 2002; Richardson & King, 1998; Stokes, 2006). Choy (2002a) found that 73% of undergraduate students have one or more nontraditional characteristics. Along with the transfer student population, adult learners, defined as above the age of 24, have increased in the realm of higher education in the last two decades and according to the U.S. Census Bureau, 37.8% of college students in 2004 were above the age of 24 (Gibson & Slate, 2010). Today, at many institutions, adult learners make up the majority of degree-seeking students (College Board, 1998). Additionally, in 2006, 40% of students were enrolled part-time and 40% attend two-year institutions (Stokes, 2006). Adult learners typically enroll part-time, take distance-based technology courses, and find creative

ways to complete their education while spending very little or no time on campus (Donaldson & Graham, 1999).

Because higher education has focused on the young, traditional student, little space, voice, and value has been given to other groups resulting in institutional neglect, prejudice, and denial of opportunities (Sissel, Handsman & Kasworm, 2001). Specifically, community colleges are an important entry point for adults with no previous higher education experience (Cohen & Brawer, 1996). Adelman (2005) argues that age at the time of entry of higher education is the demographic variable that makes the most difference in graduation outcomes. The learning styles, needs, and interests of adult learners in higher education have largely been neglected and ignored (Kasworm, 1993; Kasworm, Sandmann, & Sissel, 2000). Providing appropriate services for adult learners is still not widely adapted in most higher education institutions and without these supports in place, colleges and universities will continue to struggle (Deggs, 2011; Council for Adult and Experiential Learning, 2000). Despite an increase in adult student learners, traditional higher education practices, supports and policies are still intended to serve the traditional-aged learner and institutions remain challenged in offering support to adult learners (Council for Adult and Experiential Learning, 2000; Fairchild, 2003; Sissel, Hansman & Kasworm, 2001). By increasing adult attainment of the baccalaureate degree, results may yield high individual and social returns (Pusser et al, 2007).

Adult learners may face unique barriers due to unique background characteristics, outside responsibilities, as well as other demands that are developmentally different than the traditional student entering college directly out of high school—especially if they are employed while pursuing higher education (Council for Adult and Experiential Learning, 2000; Hermon & Davis, 2004; Terenzini et al., 1994;). This research suggests that a one-size-fits-all

institutional model developed to serve the traditional student will not suffice in meeting adult learner needs; they may require special services to address their unique challenges (Deggs, 2011; Fairchild, 2003; Mercer, 1993).

While life circumstances of adult learners may vary from their traditional-aged peers, they still succeed academically at similar or even better rates (Darkenwald & Novak, 1997; Kasworm, 1990; Kasworm & Pike, 1994). Kasworm (1990) reviewed more than 300 studies and found adult learners did as well or better than traditional-aged learners in higher education based on grades and test performance measures. While adult learners may be out of practice when it comes to basic academic skills, they do not lag behind in actual academic knowledge (Calcagno et al., 2007). Calcagno et al. (2007) found that after controlling for test scores and enrollment patterns, adult learners had a higher probability of graduation which is supportive of Bean and Metzner's (1985) model of non-traditional student attrition. Adult learners are often judged as fragmented learners who do not devote sufficient time, energy, and resources into their academic coursework (Sissel, Hansman & Kasworm, 2001). Alternatively, some research suggests that adult learners are engaged, they may just utilize different learning strategies as compared to their traditional aged peers (Smith & Pourchot, 1998). Adult learners may engage the classroom in novel ways to accommodate for their lack of time on campus or draw upon their rich personal experiences, as they may be better able to link existing knowledge to make academic connections (Donaldson & Graham, 1999).

Furthermore, adult learners may be seeking higher education for differing reasons compared to the traditional student as they may have differing motivations for returning to school (Morstain & Smart, 1997; Wolfgang & Dowling, 1981). Adult learners often seek out higher education for personal fulfillment, a critical life event, during a reassessment of goals

and priorities, or seeking a career change or an increase in job satisfaction (Gianakos, 1996; Ross 1988). Adult students are more likely to be driven to derive intrinsic fulfillment from the college experience, like self-esteem or cognitive interest, while younger students may be attending college for extrinsic reasons like social relations or parental expectations (Justice & Dornan 2001). Calcagno, Crosta, Bailey, and Jenkins (2007) studied over 42,000 first-time degree-seeking Florida college students and found that student completion of 20 college credits was a more motivating positive factor for graduation in younger students as compared to older students.

However, being employed can be a barrier for many adult learners. In interviews conducted by Kasworm and Blowers (1994), adults reported that their highest priority was work, even though they were enrolled in coursework. Additionally, students may not be able to leave work to attend classes, thus being limited to only evening or weekend classes (Ritt, 2008). Because adult learners most commonly make up evening, weekend, or distance education courses, they may be denied access and supports such as inconvenient class times and faculty office hours, inadequate career planning, and lack of campus involvement activities (Fairchild, 2003; Sissel, Hansman, & Kasworm, 2001). For example, many support services or campus aids are only open weekdays between the hours of 8 A.M. and 5 P.M., hours that are not always possible for full-time working adults to attend.

Frequently, adults reported having rusty study skills, low self-confidence, fears about returning to college, and "fear about being too old" as they begin their college careers (Carp, Peterson, & Roelfs, 1974; Chartrand, 1990; Cupp, 1991; Kasworm, 1995, 1997; Novak and Thacker, 1991). Because of this, adult learners may be less involved in campus activities, may view remedial courses more positively than younger students and might need to spend more

time studying to earn an acceptable GPA, thus, enrolling part-time (Calcagno et al, 2007; Frost, 1991; Kasworm, 1995; Quinnan, 1997; Stratton, O'Toole, Wetzel, 2004). In a study conducted by Hermon and Davis (2004), they found that nontraditional-aged learners engaged in more self-care activities, such as regular sleep schedules, doctor office visits and avoidance of tobacco and drugs. The increase in self-care may be attributed to greater life experience and acknowledgment that self-care is an important component in health and wellness consequences (Elkind, 1981; Hermon & Davis, 2004).

The body of work in adult learner supports has shown that interventions are more effective for adult learners when they are specifically designed for that population because non-traditional students may experience different critical barriers, such as time management caused by outside responsibilities, as compared to the traditional student (Foltz & Luzzo, 1998; Gibson & Slate, 2010; Hermon & Davis 2004; Prohaska, Morrill, Atiles, & Perez, 2000). Barriers such as family caregiving, employment, and community organizations may be competing demands for time and attention and may place adult learners at a disadvantage in completing their degrees (Fairchild, 2003; Jacobs & King, 2002). In the book, *Adults as Learners* (1981), Cross advocates for better understanding of the dispositional, situational, and institutional barriers faced by adult learners. Effective and specific adult education programs and supports have the potential to improve local communities and boost regional and the overall global economy (Ritt, 2008).

Enrollment Intensity

Along with a sizeable increase in adult learners, part-time enrollment is another trending demographic in higher education. From 1970 to 1998, the number of students enrolling in part-time higher education courses more than doubled and by 2004, part-time students represented

37% of the total undergraduate enrollment to two- and four-year postsecondary institutions (Laird & Cruce, 2009; O'Toole, Stratton, Wetzel, 2003). The rise in part-time students may be caused by many factors, a few of which are: a) the decline of eighteen-year-olds in the total population, b) an increase in students working full-time while taking courses, c) an increase in women taking college classes, d) an increase in equal opportunities for minorities, or e) people are living, and people are staying in the workforce longer and retiring later so they seek additional education experiences (Allen, 1993; Cohen & Brawer, 1996). However, between the years 1970 and 1998, part-time enrollment increased in traditional age students, ages 18-24, as well, which suggests part-time students are not just adult learners (O'Toole et al., 2003). The 1989 - 1990 National Postsecondary Student Aid Study by the National Center for Education Statistics found that two-thirds of undergraduates over 30 years old were exclusively part-time while approximately half of those were between the age of 24 to 30 followed by only about one-fifth under the age of 24 (McCormick, Geis, & Vergun, 1995).

However, part-time enrollment is a stand-alone variable that is rarely studied and mostly ignored as most college enrollment studies include only full-time students in their research (Laird & Cruce, 2009; Stratton et al., 2004). It has been discussed in many studies by different researchers but if it has been at all, it has typically only been included as a control variable not as the main focus of the analysis (Weiler & Pierro, 1988). The lack of research in this area stems from descriptive findings from national studies (Laird & Cruce, 2009). As a result, very little is known about outcomes related to enrollment intensity (Stratton et al, 2004). Nonetheless, there is research tied to part-time work while enrolled in higher education coursework. According to data from the Current Population Survey, 70% of part-time students

hold a full-time job, in comparison to full-time students at 16%; suggesting a link between employment and enrollment (Bureau of Labor Statistics, 2000).

While personal and household characteristics contribute to part-time enrollment, economic factors and age contribute as well, as older students are significantly more likely to attend college part-time (Stratton et al., 2004). Additionally, community college students are more likely to attend on a part-time basis as compared to four-year university students, as nearly two-thirds of community college students are enrolled part-time (Fike & Fike, 2008; Powers 2007). Adult learners or those that live in states with lower unemployment rates are also significantly more likely to enroll in college part-time (Stratton et al., 2004). Many colleges, such as elite private colleges and flagship residential state colleges, have little or no part-time enrollment whereas part-time enrollment is much more common in urban, commuter-based colleges (O'Toole et al., 2003). Therefore, part-time student supports may need to be customized to an institution's specific need and unique student population.

Oftentimes, the campus culture is not designed to support part-time learners. Part-time students report their campus environments are less supportive and they spend less time studying and participating in campus activities (Kuh, 2000; Kuh et al., 2001, NSSE, 2004). A higher percentage of part-time students at an institution could indicate that the institution may contain environmental barriers affecting engagement for all students (Laird & Cruce, 2009). A contributing factor to lack on engagement may be because faculty do not feel fully prepared on how to best teach, interact, and engage with the part-time learner (Galbraith & James, 2004). Laird and Cruce (2009) examined data from the 2005 National Survey of Student Engagement and found that part-time seniors interact with faculty less than their full-time counterparts. Part-time students attribute faculty member relationships for their in-class learning experiences as

more meaningful as compared to their full-time counterparts (Kasworm & Blowers, 1994). Faculty members can support part-time students by providing learning opportunities that are relevant to life and that meet the individual needs of the student (Allen, 1993). Similarly, supports such as academic advising and counseling should have well-trained, competent staff who are prepared to handle special problems of non-traditional students and communicate the importance of education endeavors and support of family and friends (Allen, 1993).

However, it is important to note that even if a student is categorized as part-time at the end of the semester, they may have initially enrolled as a full-time student. Oftentimes, dropped courses and change in enrollment are not captured in the final enrollment snapshot. Student transcripts generally do not account for dropped courses, withdrawals, or incompletes (O'Toole et. al, 2003). For instance, a student may have started the semester enrolled as a full-time student in 15 hours, however, by withdrawing from 6 credit hours, they are not labeled as a part-time student. Institutions must understand why students interrupt or halt their studies to more effectively influence sporadic enrollment patterns and predict future funding (O'Toole et al., 2003). Students who engage in part-time and/or atypical enrollment patterns are less likely to graduate as compared to students with more consistent enrollment (O'Toole et al., 2003).

Much like adult learners, students enrolled part-time may have responsibilities outside of their coursework. Often, these outside responsibilities can be a full-time job or various household responsibilities (Stratton et al., 2004). For instance, married men may feel more pressure to devote more time to work and be the breadwinners to provide financial support for their family and women with young children may feel the need to devote more toward child caretaking (Stratton et al., 2004). Students attending higher education exclusively part-time are much more likely to have a non-spouse dependent (McCormick et al, 1995). When faced with

other responsibilities, attending college part-time may be the only option for some students. If these students were forced to choose between attending college full-time or not attending at all, they may choose not to attend (O'Toole, 2003).

Students with a higher number of dropped hours during the first fall semester have decreased the odds of students' retention, and ultimately transfer (Broughton, 1986; Fike & Fike, 2008; Kohen, Nestel, & Karmas, 1978; O'Toole et al., 2003). Findings that suggest this persistence decline were consistent with findings by Mohammadi (1994), when he found a positive association between hours completed and graduation. However, there are criticisms on previous research using the part-time enrollment barrier, implying there is not truly a causal influence on persistence (Weiler & Pierro, 1988). An argument against a strong correlation between part-time enrollment and persistence is that there are simply too many factors that may influence student persistence and enrollment decisions (Weiler & Pierro, 1988).

Tuition cost at a four-year institution is often a hurdle that many students cannot afford. As a gateway to a bachelor's degree, many students enter higher education by way of community college as a more affordable option in obtaining credits to later count toward their bachelor degree. In 2016, over 400,000 students transferred from a community college to a four-year institution in the United States (Glynn, 2019). Further, the cost of college can hinder enrollment intensity (Stratton et al., 2004). State supports around part-time enrolled student varies greatly, as seventeen states do not provide any need-based aid to part-time students and another 18 states devote less than 10% of need-based aids to part-time students (Council for Adult and Experiential Learning, 2008). Part-time students are allocated a small portion of financial aid and Noel, Levitz, and Saluri (1985) note that this available aid should be well publicized so nontraditional students are able to take advantage of this service.

Overall, part-time students represent a substantial amount of higher education institution enrollments. Two- and four-year institutions must support these students in their transfer process even though these students may take a longer route to completion. Since so few studies examine part-time student engagement and their outcomes, much work needs to be done in this area since part-time students make up a significant subgroup of all postsecondary students.

Gender Differences in College Success

Along with the trend of nontraditional students growing amongst institutions across the country, the gender gap among postsecondary students continues to grow; a statistic that can be problematic as many institutions strive for a gender balanced student population (Carbonaro, Ellison, & Covay, 2011; Gibbs, 2008). Male college enrollment has declined from 71% in 1947 to 43% in 2005 (Snyder, Dillow, & Hoffman, 2008). The male-dominated college population lessened as more females began attending and graduating from colleges beginning in the 1990s as more women entered the workforce (Choy, 2002b; O'Toole et al., 2003; Wirt et al., 2004). In addition to the male decline in enrollment, male students are also completing college at lower rates in comparison to females (Conger & Long, 2010). During 1970 to 1998, the part-time enrollment growth among women increased by 190%, while men increased by 59% (O'Toole et al., 2003).

While empirical literature has not kept pace with the gender disparities in higher education, research does suggest that high school grades and performance may help explain the postsecondary gender enrollment and completion gaps (Jacob, 2002; Peter & Horn, 2005, Reynolds & Burge, 2008; Riegle-Crumb, 2007). Male students generally have lower high school grades prior to college and this finding may explain why males take fewer credits and earn lower grades in comparison to females in their first semester of college (Conger & Long,

2010). High school performance can be a strong predictor of academic persistence based on gender. High school grades and class rankings are a better predictor of college success including, grades, credits earned, persistence, and graduation, than high school achievement scores such as the ACT or SAT (Conger & Long, 2010). Bodies of research in academic gender discrepancies suggest female students often have higher GPAs and test scores compared to males, participate in a more rigorous academic curriculum, and often exert greater effort and engagement into high school studies (Carbonaro, 2005; Hyde, Lindberg, Linn, Ellis, & Williams, 2008; Jacob, 2002; National Science Board, 2008; Reynolds & Burge, 2008, Rosenbaum, 2001; Smerdon, 1999; Xie & Shauman, 2003; Wirt et al., 2004).

Although females may have better higher education persistence and apply in greater numbers to college following high school, they are also more likely to attend and complete their education at a two-year institution (Carbonaro et al., 2011) suggesting gender barriers may differ between traditional and transfer students. Holahan, Green, and Kelley (1983) found that higher rates of male transfer students graduated as compared to female transfer students. This research was supported by Grubb (1989), as his findings, utilizing state-level data also found that women are less likely to transfer; although he was unable to determine the cause of this phenomenon. However, women transfer students begin with a higher GPA and even outperform men during their time at the receiving institution (Kelley & House, 1993). Findings by Carbonaro, Ellison, and Covay (2011) suggest that females may be overrepresented at two-year colleges and underrepresented in four-year colleges. Subsequently, students majoring in allied health or secretarial professions, which are generally females, are much more likely to attend two-year colleges (Surette, 2001).

Some studies have suggested that female students may have higher non-cognitive skills as compared to their male counterparts which can reflect better organization, dependability, self-discipline and a higher likelihood to reach out for help when needed (Reynolds & Burge, 2008; Riegle-Crumb; 2007). These characteristics may help explain why females have higher high school GPAs, are more likely to graduate from high school, and more likely to take rigorous course loads in high school (Peter & Horn, 2005; Riegle-Crumb, 2007). However, after entering postsecondary education, females are less likely to major in academically rigorous courses such as mathematics and engineering (Turner & Bown, 1999).

Conger and Long (2010) used data from the Florida Department of Education to examine high school and postsecondary performance data, as well as census enrollment data for five Texas higher education institutions. Conger and Long (2010) argued that although this dataset is limited to only two U.S. states, Florida and Texas, 13% of U.S. freshman in 2005 attended college in these two states which makes their findings relevant in national discussions (Snyder, Dillow, and Hoffman, 2008). Analysis of this data suggested that not only are females more likely to enroll in college, they also outperform their male counterparts (Conger & Long, 2010). However, if females delay enrollment at a four-year institution, they no longer have any advantage over males in terms of college completion (Carbonaro et al., 2011). Furthermore, the delay in enrollment in transferring institutions is comparable to those who delay transfer to earn their bachelor's degree; both groups are less likely to persist (Long & Kurlaender, 2009).

Conger and Long (2010) suggest that this performance gap may be attributed to males choosing more academically challenging majors and females are being more likely to accept academic and financial support. Additionally, females may have greater incentives to complete their college education leading to a better return for a college degree since female-dominated

occupations are more closely tied to college credentials (Charles & Luoh, 2003; DiPrete & Buchmann, 2006; Jacobs 1996). Furthermore, expectations and anticipated learning outcomes for males and females differs and could also be a contributing factor in gender differences (Wawrzynski & Sedlacek, 2003). For example, Wawrzynski and Sedlacek (2003) found that males are more interested in academics, working with faculty, and developing leadership skills while females seek a more holistic higher education experience by incorporating social aspects, like campus organizations, and learning about culture and community service. As a result, women that are actively part of their respective campus community show greater self-efficacy and career behaviors (Ancis & Phillips, 1996).

Bean (1980) found that men and women leave college for differing reasons. Men seek routine and student satisfaction. Women seek institutional commitment, quality programs, and a sense that the role of a student is routine (Bean, 1980). Furthermore, women face additional barriers in completing a bachelor's degree such as marital status, the presence of children and gender difference in occupational preferences (Surette, 2001). One of the largest groups of nontraditional students is women over 30 (Allen, 1993). This subset of students may be motivated to enroll in higher education due to midlife transition, divorced or widowed status, or children leaving home since many women delay seeking higher education until children are in school (Allen, 1993; Menson, 1982).

While gender differences in higher education degree attainment have yet to be fully explored in the literature, this particular area of study may continue to serve as a key explanatory variable for graduation and beyond. Educational attainment by gender can serve as a great predictor of adult outcomes including income, occupation attainment, and health (Pallas, 2000). In gaining further information on gender differences in higher education and higher

education transfer, supports can be established that may decrease unique gender barriers encourage degree attainment.

Transfer Shock

The Community College Research Center (Jenkins & Fink, 2015) reports that only 17% of community college students earn a bachelor's degree after transferring to a four-year institution. One of the major themes associated with college student attrition includes transition or adjustment problems (Noel, Levitz, & Saluri, 1985). However, most institutions report their retention and graduation rates based on cohorts of first-time freshman students, which makes transfer student persistence difficult to track (Ishitani, 2008). Transfer shock is supported by research under the bigger umbrella of adult transition theory and the concept of culture shock.

The term transfer shock is a phenomena frequently used throughout higher education and the literature to describe departure of students from high school to college. Hills (1965) coined the term, transfer shock, and described it as the dip in transfer student's grades during their first semester after transferring to a four-year institution. Transfer shock can display as failure to acclimate to academic and social factors and the state of confusion and disorientation (Ivins et al., 2017; Rhine et al., 2000). Furthermore, students experiencing transfer shock may experience anxiety, paranoia, irritability, depression, lowered self-esteem, communication issues, disorderly internal beliefs and values, and isolation; all factors that make it difficult to maintain academic coursework (Anderson, 1994; Bennett, 1977; Gullahorn & Gullahorn, 1963). As transfer shock is closely associated with student transition, the term transition is often compared to a student experiencing a crisis or upheaval (Schlossberg, Goodman, & Anderson, 2006). However, while these negative feelings may occur, the choice of transfer institution

require self-awareness and the student is aware of the incoming move between two socio-cultural systems (Ivins et al., 2017).

For many students, the choice in attending a two-year institution to begin their college experience is not a question of academic ability, as students scoring in the top percentile academically in high school are actually more likely to enroll at a community college if they come from lower socioeconomic status (Theokas & Bromberg, 2014). In support, research has shown that GPA earned at a community college is a primary factor in predicting academic success at a four-year institution (Ditchkoff, Laband, & Hanby, 2003; Townsend, McNerny, & Arnold, 1993). Instead, failure to transfer is not due to academic ability, but rather institutional or financial factors like insufficient financial resources, poor transfer advising, and/or limited course planning or lack of credit transfer (Glynn, 2019). These findings suggest that students who come from a lower socioeconomic status may not fit into the higher education environment.

Research surrounding transfer shock related academic persistence has mixed results. Some research suggests transfer shock has a negative effect on performance (Holahan, 1983; Ishanti, 2008; Knoell & Medsker, 1965), while other studies found no implication of transfer shock tied to a decline in overall persistence and graduation (Al-Sunbul, 1987; Auluck & West, 2017; Ells, 1927; Miller, 2013). For instance, Holahan et al. (1983) found that transfer students are less likely to graduate as compared to native students, Glass and Harrington (2002) found that transfer and native students graduate at similar rates, and Miller (2013) reported that native students consistently graduate at higher rates than transfer students. Aulck and West (2017) examined the transcripts and demographic records of nearly 70,000 over a 15-year span and found little difference between community college transfer and freshman entrants in terms of

grades and persistence. However, Rouse (1998) argued that even though transferring from a community college may slow the process towards obtaining a degree, the negative benefits are far outweighed with positives for students that will benefit from supports provided by community colleges. In consolidating much research, Diaz conducted a metanalysis of 62 studies in relation to transfer shock. Diaz found that while 79% of students reported experiencing transfer shock, they recovered within one year and the GPA difference was only half a grade point or less (Diaz, 1992).

Studies have shown that native students, or students who started their higher education journey at the same four-year institution, have higher GPAs than first-semester transfer students (Peng & Bailey, 1977; Porter 1999). Ishitani (2008) studied over 7,500 students to understand the longitudinal impact after experiencing transfer shock. He found that during their first semester, sophomore and junior transfer students were 73% less likely to depart than freshman transfer students (Ishitani, 2008). This may indicate that transfer students decide early on in the transfer process if they intend to persist. Institutional collaboration can encourage coordination between sending and receiving institutions to mitigate transfer shock and help to guarantee student success (Ivins et al., 2017; Jackson & Laanan, 2015). Coordination between two- and four-year institutions may increase communication regarding transfer students and encourage continued enrollment immediately following graduation or earned credits from two-year institutions.

Review of the Literature Conclusion

The literature provides insight into the importance surrounding the effective transition and success of community college transfers to a four-year institutions. Modification or creation of transfer student support systems will be futile unless community college and four-year

institution faculty, administrators, staff and policy makers possess an understanding of the barriers faced in higher education to these students (Deggs, 2011). Highly educated citizens and individuals in the workforce can dramatically increase our quality of life and future of our nation; an achievement that cannot be done without the assistance of higher education institutions (Ritt, 2008). This review and detailed description of the current higher education landscape for transfer students will hopefully guide future research and policy in transfer student support, and ultimately, an increase in associates and baccalaureate degrees across the nation. While research and interventions have generally not kept up with the rapidly changing demographics of transfer students today, political and institutional action may lead to the removal of transfer students' barriers, as suggested by individual characteristics, and develop customized student supports for students transitioning from community colleges to four-year institutions.

CHAPTER THREE:

CONCEPTUAL FRAMEWORK

The purpose of this study was to explore the community college to four-year institution transfer student characteristics associated with their graduation and/or degree attainment, using data from students attending a large community college system in Oklahoma. It is hoped that this study may help inform higher education administrators and policy makers' efforts to design appropriate supports that could lead to better success for this marginalized college-going group, but also might lead to a higher rate of matriculation to four-year institutions by community college students. The study was guided by the following research questions:

1) What factors predict bachelor's degree graduation for community-college-to- four-year-university college transfer students?
2) Is there a difference in degree attainment (both bachelor's and associate's) depending on transfer institution type?

Building a Conceptual Model of Community College Transfer Student Success

In this chapter, a comprehensive conceptual model of community college transfer student success was developed from the extant literature in the hopes that such a model can form the backbone of a new line of inquiry into the pathways of success for community college to four-year institution transfer students—a marginalized group of college-going students. In beginning this nascent line of inquiry, this study took a modest first step by investigating one small portion of this new model: those student characteristics prior to transfer that are associated with eventual 4-year college graduation.

As community colleges become more accessible and opportunity increases for more students to participate in postsecondary education, many critics argue that this accessibility may

result in a revolving door of many students entering and few persisting (Richardson & Bender, 1987). Students who aspire to earn a bachelor's degree when beginning at a community college are less likely to earn a bachelor's degree than those students who began their education at a four-year institution (Alfonso, 2006). However, it can be argued that this statement is trumped by the opportunity of "college for all" and this research can help to eliminate barriers, allowing community college students the same chance at earning a bachelor's degree. As the population of transfer students continues to grow, higher education professionals are searching for strong theories to build supports. This perspective has led to a closer examination of student transfer rate completion and drop out.

Broadly, student transfer is viewed simplistically as moving from one institution to another. Much of the current research on student persistence, however, is aimed toward the traditional college student, allowing further research specifically for nontraditional students, like transfers; a student population with vastly differing needs. Nontraditional students have different motivations from those of traditional-age students for attending college (Morstain & Smart, 1977; Wolfgang & Dowling, 1981). Nonetheless, studies are beginning to report student characteristics that can stand in the way of institutional transfer for all students (Anderson, Alfonso, & Sun, 2006; Fairchild, 2003; Jacobs & King, 2002; Kasworm & Blowers, 1994). Characteristics might include, age, race/ethnicity, enrollment intensity, social integration, and lack of support by sending and receiving institutions. Researchers studying the transfer from community college to different institutions are looking to transition theories to help explain student departure prior to degree completion.

Theoretical/conceptual perspectives, specifically for transfer students from community colleges, are lacking and not clearing established within existing theoretical frameworks for

college students more broadly (Cutwright, 2011). Student persistence, degree attainment, and variables attributing to educational stop out are not well understood and require further research. Key theorists, such as Tinto (1975) and Bean and Metzner (1985), have developed models and theory to explain the increase in student attrition in the context of student transition and change which can be applied to transfer students and to the decline in matriculation from community colleges to four-year institution. By understanding the characteristics among community college transfer students, researchers can better develop policy and procedure to encourage persistence and graduation.

It is important to utilize both Tinto and Bean and Metzner's theories when examining student transfer. Tinto (1975) primarily addressed student attrition using institutional relationship variables, while Bean and Metzner (1985) relied on environmental variables. Demographic characteristics, which are present pre-matriculation and have a strong effect on student attrition, are incorporated into both theories. While the process of transfer from community college to another institution is not included specifically, the transfer process can be described as a pre-matriculation occurrence happening before four-year institution class attendance. Additionally, transfer students may go through the stages of each model twice; first during their community college experience and then again as they transition to a university or another 2-year college.

Thus, developing a conceptual framework for community college transfer student success begins with Tinto's Theory of Student Departure (1975) and Bean and Metzner's Model of Nontraditional Undergraduate Attrition (1985). While both theories vary in foundational elements explaining student dropout, they still aid in identifying potential student barriers and reasons for lack of student matriculation or continuation. Relying on a theoretical lens can aid in

isolating factors, or groups of factors, leading to student attrition by offering an understanding of how barriers are connected (Braxton & Lee, 2005). While community colleges and four-year institutions may not be able to control pre-matriculation demographic characteristics, institutions can create institutional support mechanisms to maximize student integration leading to persistence.

Despite the validity of the Tinto model, Bean and Metzner claimed Tinto's theory is less applicable to programs with limited social interaction between peers and faculty or specifically designed for students exiting two-year colleges (Haplin, 1990; Lint, 2013;). However, Tinto acknowledged that external events have less of an impact on non-residential students, or students at a community college, but the environment in the classroom is what matters most to these students (Tinto, 2006). Instead, Bean and Metzner argued that non-traditional students are more affected by environmental, background or academic variables such as, study hours, enrollment intensity, and family responsibilities, rather than social integration as suggested by Tinto. Although most of Tinto's research centered around students attending a four-year institution, the model is still important for community colleges to learn to better serve their students and community (Kubala, 2000).

Tinto's Theory of Student Departure

Vincent Tinto's (1975, 1982, 1987) Theory of Student Departure is a theory based on student retention and persistence as applied to relationships between students and institutions. The specific study of student relationships with institutions allows Tinto's Theory of Student Departure to be applicable when studying student persistence during the transition from community college to a four-year institution. By utilizing Tinto's theory as a lens in the study of student demographics and persistence to community college to four-year institutions,

researchers may better understand how pre-college attributes and institutional commitment can lead to either graduation or dropout. Tinto's model describes a reciprocal functional relationship between different types of academic and social systems. The model's primary purpose is to identify reasons for student departure, and by understanding departure theory, researchers and higher education administrators can better understand student retention and persistence. For example, as institution commitment increases, the likelihood of student attrition decreases which retains the student, leading to graduation.

Tinto's theory is especially valuable for transfer students and they move from one institution to another. Transfer students may have grown comfortable in their community college environment and transitioning to a new institution might be difficult as a result. In transferring to a new college, students must integrate into new academic and social systems which leads to new levels of institutional commitment (Webb, 1998). Furthermore, Tinto's theory was supported by research by Pascarella, Smart, and Ethington (1986) when they studied 825 students, initially enrolled in two-year colleges, and tracked them over a nine-year period. They found that academic and social integration were the two variables with the most positive effect on student persistence.

When the idea of student retention was first proposed around forty years ago, student attrition was blamed on the student and not the institution (Tinto, 2006). Tinto's theory describes student departure as a longitudinal process and, with it, a number of barriers can affect dropout—barriers that can be controlled by the institution. The lack of collaboration between community colleges and transferring institutions in the guidance of transitioning transfer students may apply to the dropout that Tinto refers to in the theory of student departure. Tinto describes the connections between an environment and an individual, or in this case, the

institution and the student. Tinto explains that personal characteristics such as family, background, or pre-college academic experiences, combined with institutional factors, such as initial commitment to the institution and college goals, are directly related to a student's departure decision (Braxton & Lee, 2005; Tinto, 1975). Generally, Tinto describes student persistence as linked to three main categories: social integration, academic integration, and student goal commitment. While the study of persistence has come far since the introduction of the model in 1975, the theory is still valuable today, although, for some students, some aspects of the model may be more important than others (Stage, 1989; Tinto, 1975). This theory relates to the current transfer student problem because it explains factors, on a broad level, that correspond to particular student characteristics in the community college to four-year institution transfer process.

Social integration refers to the degree in which the student feels comfortable within the institution's social and institutional framework (Wetzel, O'Toole, & Peterson, 1999). The more the student feels as if they fit in with the campus culture and institution social environment, the greater degree of loyalty they have toward their institution, and the higher likelihood of retention (Wetzel et al., 1999). As expected, the culture shift, or transfer shock, can be significantly different for students transitioning from a community college to a four-year university in comparison to native students. However, social integration can have a different definition based on type of student. Students that do not feel socially accepted at their community college, may never matriculate to a four-year institution under the same social assumption, even though the experience could be completely different. Researchers (Pascarella & Terenzini, 1983; Pascarella & Chapman, 1983; Terenzini & Pascarella, 1980) who have utilized Tinto's framework have consistently found that academic integration has the strongest

influence on persistence in students with low levels of social integration (Stage, 1989). For example, students that met regularly with their professors often felt more academically integrated, which helped lower attrition (Tinto & Russo, 1994).

A second pillar of Tinto's theory focuses on student goal commitment. A student's initial commitment and goal to complete college strongly influences college persistence, and subsequently, college graduation (Braxton & Lee, 2005). While student goal commitment can be difficult to quantify, factors such as credit hour completion, grade point average, and enrollment status may be determining factors in persistence. Tinto's model indicates that students with goals to succeed pre-matriculation, have a higher likelihood to succeed and persist (Kubala, 2000). Higher education institutions may benefit from early and high school education about college in order to encourage institutional commitment when the time comes for college enrollment.

Bean and Metzner's Model of Nontraditional Undergraduate Student Attrition

In 1980, the Carnegie Council of the U.S Department of Education (1980) announced that older, part-time, and commuter undergraduate students were an increasing population at higher education institutions across the country and to expect this trend to continue. Previous researchers of student attrition (Bean, 1985; Pascarella, 1980; Spady, 1970; Tinto, 1975) primarily focused on socialization in the college environment to explain dropout. However, Bean and Metzner relied on variables other than socialization in the student's life to explain dropout behavior. As a result, Bean and Metzner developed the model of nontraditional undergraduate student attrition to help explain the characteristics of this specific population. The model includes seven variables that influence dropout rates, with four main variables that have a direct effect on student drop out. The four main variables include background and

defining variables, academic variables, environment variables, and psychological background, with social integration variables, academic outcomes, and intent to leave as supporting variables. While social integration is included as a moderating variable that could produce possible effects, Bean and Metzner did not believe it was strong enough link leading to student attrition.

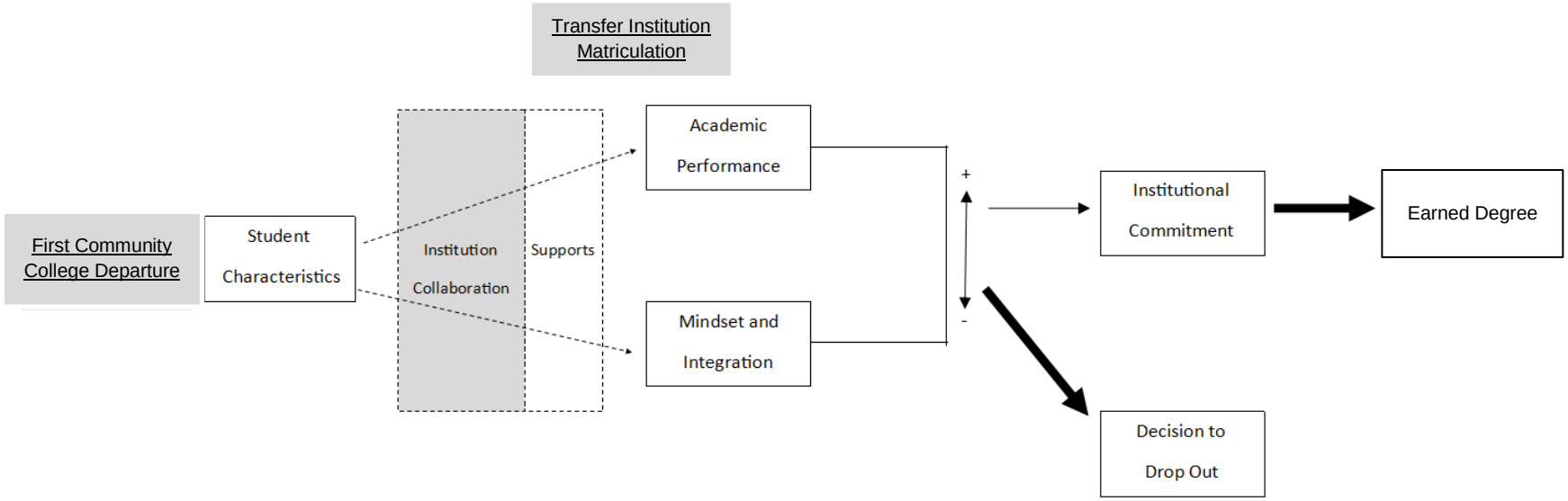
For nontraditional students, background and defining variables include age, hours enrolled, educational goals, high school performance, ethnicity, and gender. These background variables are often included because past behavior is expected to predict future behavior (Bentler & Speckart, 1979). While most of these factors are determined pre-matriculation to higher education institutions, Bean and Metzner find that these characteristics contribute to college persistence. Academic variables include study hours, study skills, academic advising, absenteeism, major and job uncertainty, and course availability. Environmental variables, or variables that occur outside the scope of academic include finances, hours of employment, outside encouragement, family responsibilities, and the opportunity to transfer, are all factors that are common among the nontraditional student population. Psychological outcomes can display as satisfaction, goal commitment and stress while social integration variables can include memberships, faculty contacts, and school friends. Many of these variables are understood after the student has spent sufficient time at the college and have had time to form their opinions. By the time data is collected concerning institutional variables, the decision to stay or go may have already been decided by the student. In a proactive manner, institutions must utilize this research to anticipate variables that may cause students to make the decision of leaving the institution.

Furthermore, the model depicts interaction effects between variables. For instance, when academic variables are good, but the environment variables are poor, this could lead to student drop out. Inversely, if environmental support is high and academic support is low, students would be expected to remain in school. For example, if a student is unable to adjust their work schedule to accommodate class times, they will not continue to be enrolled in school despite feeling supported academically. Additionally, Bean and Metzner (1985) suggest that higher education institutions need to help eliminate external pressures for students such as childcare, distance learning, or by providing intensive advising, counseling, or other supports (Calcagno et al., 2007). Environmental variables are presumed to have more influence on student drop out than academic variables (Bean & Metzner, 1985). Additionally, each academic variable may affect the student's psychological outcome so, it is important that note that all factors interact and can affect one another.

Utilizing the concepts included in Tinto as well as Bean and Metzner's models as well as corresponding literature, Figure 1 depicts how student characteristics among community college to four-year institution transfer students may be associated with academic persistence and graduation. The model begins with departure from a community college and matriculation to a four-year institution. As students matriculate, they already possess characteristics that have not been shaped by the four-year institution. During the transfer process, students may or may not observe, participate in, or acknowledge support services and collaboration between their respective community and four-year institution. As students experience the positive or negative effects of collaboration and supports within the transfer process, this affects the academic performance, mindset, and integration students may feel toward the institution. Academic performance, mindset, and integration into the university community may lead to institutional

Figure 1

Community College Student Transfer Model



commitment, increasing the chances of graduation, as suggested by Tinto (1975). Consequently, negative academic performance, mindset, or integration may lead to institutional commitment, which may lead to student dropout or attrition. Bold arrows within the model signify a presumed effect as indicated by the literature.

Current Study

Acknowledging that student transfer can be a protracted process and include multiple variables that predict course completion, this study will specifically focus on student characteristics in the time period in which a student is at the community college through the time they depart and matriculate at a new institution and connect these characteristics to bachelor's degree completion. This necessarily means that the model presented in Figure 1 is not the model to be tested in this study. However, because there is a dearth of literature on the path to graduation of community college transfer students, such an over-arching model can serve as a model for the field, as it depicts how community college student characteristics may impact many parts of postsecondary education such as academic performance, mindset and integration, and institutional commitment. In this vein, the current study will focus on one specific piece of this overall model—the specific student characteristics that are associated with student graduation, according to the literature. Figure 2 below displays the enlarged section of Figure 1 to be the focus of this study.

In using Tinto, Bean, and Metzner's theories as a lens, Figure 2 highlights the student characteristics of focus in this study, as suggested by the literature (and reviewed in the last chapter), that may contribute to community college transfer student success. They are: gender, age at first fall enrollment, race and ethnicity, number of institution transfers, prior enrollment

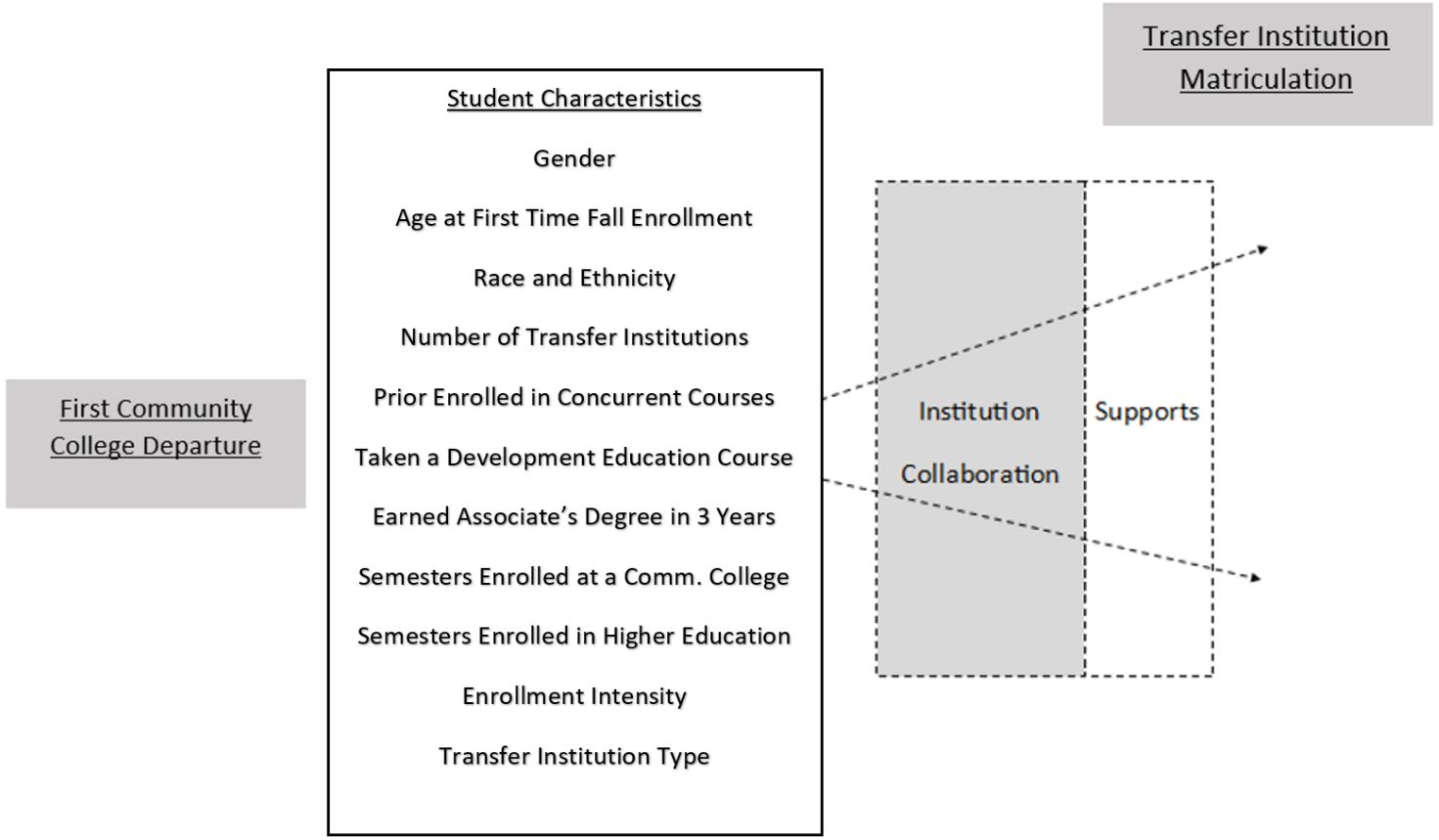
in concurrent courses, taken a developmental education course, earned associate's degree in three years, semesters enrolled at a community college, semesters enrolled in higher education, transfer institution type, and enrollment intensity. These variables are connected to Tinto's theory which addressed issues of student transition and institutional collaboration. Additionally, these variables are connected to Bean and Metzner's theory through their focus on understanding student characteristics and past behavior in order to predict future academic success. Below is a brief recap of the evidence associated with each of these characteristics and student success as discussed in the prior chapter.

Gender is a common variable included in research studies, but is particularly important in the study of community college transfer students due to the differing rates of transfer in higher education and degree completion rates by gender. In comparing gender to the outcome variables, the literature contributes to possible outcomes. For instance, male students are more likely to transfer, therefore have a higher chance of completing their bachelor's degree in 6 years (Holahan, Green, and Kelley, 1983; Grubb, 1989), however, females are more likely to complete their education at a community college, which increases their chance of associate's degree attainment (Carbonaro et al., 2011). Overall, the literature suggests that gender barriers may differ traditional and transfer students and additional variables such as enrollment intensity and academic performance are often linked to gender.

Community colleges often attract nontraditional, or older students, because of their open-access opportunities, which draws in a diverse student population that may be seeking opportunity for transfer, career advancement, or the ability to take courses while working a full-time job. As a result, community college students are usually enrolled part-time, work an outside job, less involved in campus activities, and have greater family responsibilities in

Figure 2

Community College Transfer Model Study Focus



comparison to four-year intuition students. Additionally, even if a community college student is not defined as a nontraditional student in terms of age, they likely still have a few nontraditional student characteristics (Choy, 2002a). Since age plays a critical role in college success, due to the nature of outside life responsibilities increasing as age increases, this variable was important to include when examining earned associate's and bachelor's degrees.

Similar to gender, race and ethnicity is often used in educational studies. Upon design, community colleges were created to serve minority and low-income students, a mission that is still at the forefront at most community college's missions. Due to higher relative enrollment of traditionally underserved groups, community colleges often have a unique student population—one that might be entirely unfamiliar with higher education systems and processes. Students from these underrepresented groups may begin at a community college with only the goal of completing an associate's degree.

Students that have previous enrollment in concurrent courses or have taken a developmental education course at a community college, can largely attribute these actions to high school academic performance. For example, students that participated in concurrent, or dual enrollment often had high grades in high school and higher scores on tests like the ACT or SAT (Conger & Long, 2010). Inversely, students enrolled in developmental courses often had lower high school grades or did not meet the benchmark scores in math and reading needed in order to skip over remedial college courses. The Center for Analysis of Postsecondary Readiness reported that 60% of community college students that began in 2013 were enrolled in a remedial course (2021). In preparation for transfer to a four-year institution, community college students often complete developmental education courses at a community college, prior to transfer. Therefore, since concurrent students enter a community college as high academic

achieving students, this may correlate to greater academic success as measured by associate's degree and bachelor's degree completion.

Earned associate's degree in three years, semesters enrolled at a community college, semesters enrolled in higher education, and enrollment intensity are all included as variables because, essentially, they all have to do with time. The time enrolled, either at a community college or four-year institution, directly aligns with pathways and degree mapping as described in the literature. Pathways and degree mapping are support systems that serve as guide for students to meet their education goals, as soon as possible, with minimal time wasted on unnecessary courses. In theory, the better that degree mapping is implemented at a community college and four-year institution, the sooner students should earn their degree. The variables of earned associate's degree in three years, semesters enrolled at a community college in higher education will be important factors to consider when analyzing the outcome variables of earning an associate's degree and earning a bachelor's degree in six years.

As an essential pieces of community college student bachelor's degree completion, transfer institution types and the number of times a student transferred to a new institution were also used as variables in this study. In order for student to complete the outcome of earned bachelor's degree within six years, community college students must transfer at least one time to a four-year institution. As stated in the literature, articulation agreements can help ease transfer barriers for students, but articulation agreements are different based on each institution and do not include the same transfer policies (Simone, 2014). Additionally, the number of times a student transfers may indicate a higher level of transfer shock. The literature describes transfer shock as a state of confusion and disorientation as students pass from one institution to another (Ivins et al., 2017; Rhine et al., 2000). Tinto's theory describes a positive relationship between

institutional collaboration and student degree attainment. By including transfer institution types and number of times a student transfer, this may provide information on earned associate's degree and earned bachelor's degree based on institution collaboration.

Based on the literature, several hypotheses relevant to this study can be made: 1) that community college students who earn an associate's degree before transfer are more likely to have earned a bachelor's degree from a four-year institution; 2) community college students that transfer to a four-year public institution are more likely to have earned their associate's degree than those that transfer to other types of institutions: two-year public, four-year private, and/or for-profit; and 3) community college students that transfer to a four-year public institution are more likely to have earned their bachelor's degree than those that transfer to other types of institutions: two-year public, four-year private, and/or for-profit. These hypotheses will be tested by means of data provided by a 2013 cohort of community college transfer students.

CHAPTER FOUR:

RESEARCH DESIGN AND METHOD

As college affordability becomes a financial struggle for most Americans, many students are first attending a community college in pursuit of a bachelor's degree due to low cost, access, and course flexibility. However, rates of transfer for students transitioning from a community college to a four-year institution have not kept up with the growing community college enrollment. In reviewing student characteristics, a realization of the need for greater understanding of the community college to four-year institution becomes apparent.

Thus, the main purpose of this research was to explore the characteristics among community college to four-year institution transfer students that are associated with academic persistence and graduation. The review of the literature demonstrated that there are many qualitative studies studying transfer student barriers and transfer perceptions, but this study, in particular, focuses on quantitative analysis using a sample of community college students. The research questions guiding this research were:

RQ 1: What factors predict likelihood of bachelor's degree graduation for community college transfer students?

RQ 2: Is there a difference in the likelihood of degree attainment (both bachelors and associates) depending on transfer institution type?

Research Design and Sample

To answer the stated research questions, this study employed an observational, correlational design. Table 1 provides an overview of the research questions and the data sources and analytical tools used to answer each of them. The sample was derived from a dataset provided from City Community College (a pseudonym). Data was both collected by the

institution and by the National Student Clearinghouse. The sample in question was the 2013 cohort of first-time enrolled students that transferred to or from City Community College. The total sample was 1,082 students. Students from the 2013 cohort were chosen because data were made available for their last 6 years enrolled in higher education. In this study, transfer students are defined as students that moved enrollment from one institution or more. There is not a minimum number of credit hours earned to be defined as a transfer student.

Table 1

Overview of Research Design

	Research Question	**Analytical Approach**	**Data Source**
Research Question 1	What factors predict likelihood of bachelor's degree graduation for community college transfer students?	Quantitative: Logistic Regression Quantitative: Descriptive Statistics	2013 cohort of transfer students to and from City Community College
Research Question 2	Is there a difference in the likelihood of degree attainment (both bachelors and associates) depending on transfer institution type?	Quantitative: Logistic Regression Quantitative: Descriptive Statistics	2013 cohort of transfer students to and from City Community College

Measures and Instrumentation

The data provided from City Community College contained the variables aligned with the targeted student characteristics in the conceptual model, which consisted of several

independent and two primary outcome variables: obtained associate's degree or obtained bachelor's degree. Primary covariates included, enrollment intensity, race/ethnicity, number of transfers, gender, age, developmental education courses, concurrent courses, total semesters enrolled at a community college, total semesters enrolled in higher education, enrollment intensity and earned associate's degree in three years. More specifically, enrollment intensity includes student the longitudinal average in which students were enrolled; gender includes male, female, or not reported; race/ethnicity includes White, Black or African American, Hispanic of any race, and Other; and age at first time of enrollment is a continuous variable to include age enrolled, while developmental education courses and associate's degree obtainment are dichotomous variables in which students have either taken/not taken or obtained/not obtained, respectively. Institution types include: four-year public and Other institutions including two-year public, four-year private, and for-profit. Table 2 displays the descriptive statistics for the study sample according to the variables described above and below.

Outcome Variables

Earned Bachelor's Degree in 6 years. This variable is a dichotomous variable in which community college transfer students did (1) or did not complete (0) a bachelor's degree from a four-year institution within 6 years.

Earned Associate's Degree. This variable is a dichotomous variable in which students did (1) or did not complete (0) an associate's degree from a community college within 6 years.

Independent Variables

Gender. A dichotomous variable where female was coded as 1 and male 0. The breakdown of the sample was *n*=543 (50.2%) for male and *n*=538 (49.7%) for female.

Table 2

Descriptive Characteristics of the Sample

Measures	n	%	Mean	*SD*	Min	Max
Demographic and Student Characteristics						
Gender						
Male	543	50.2				
Female	538	49.7				
Age at First Fall Enrollment	1082	100	19.69	4.73	18	50
Race and Ethnicity						
White	624	57.7				
Black or African American	89	8.2				
Hispanic of Any Race	101	9.3				
Other	268	24.8				
Transfer and Enrollment Behaviors						
Number of Institution Transfers						
0-1 Institution Transfer	819	75.7				
2 Institution Transfers	209	19.3				
3 or more Institution Transfers	54	7.7				
Prior Enrollment in Concurrent Courses			1.76	.426		
Yes	257	23.8				
Taken a Developmental Education Course			1.45	.498		
Yes	596	55.1				
Earned Associate's Degree in 3 Years			1.50	.500		
Yes	537	49.6				
Earned Bachelor's Degree in 6 Years			.015	.498		
Yes	486	44.9				
Total Semesters Enrolled at a Comm. College	1082	100	6.74	3.591	1	20
Total Semesters Enrolled in Higher Education	1082	100	13.96	5.994	1	56
Enrollment Intensity	1082	100	3.102	.598	.14	4.00
Part-time Enrollment		6.2				
Part-time/Full-time Enrollment		49.5				
Full-time Enrollment		6.5				
Other		38.1				
Transfer Institution						
Institution Type	1081	99.9	2.20	2.364		
4-Year Public	742	68.6				
All Other Institution Types	339	31.3				

Age at First Time Fall Enrollment. A continuous variable based on what age the student was when they first enrolled in higher education during fall enrollment. Students under the age of 18 were excluded from this study. The mean age at enrollment was 19.69 (SD=4.73) with a minimum of 18 and maximum of 50.

Race/Ethnicity. Race was recategorized as a series of dummy variables for the regression analysis. The majority of students in this study were White *n*= 624 (57.7%). The next largest population was students that identified by more than one race n=107 (9.9%), followed by Hispanic of any race *n*=101 (9.3%), Black or African American *n*=89 (8.2%), and Other races (24.8%). White was the reference category for the regression analyses.

Prior Enrollment in Concurrent Courses. Concurrent courses allow high school students to complete college credits while still enrolled in high school. The variable was coded as a dichotomous variable where 1 represents that the students did participate in concurrent enrollment and 0 represents that the student did not participate in concurrent enrollment.

Earned Associate's Degree in 3 Years. This variable was coded as a dichotomous variable in which students that completed their Associate's degree within 3 years were coded with 1 and students that did not complete their Associate's degree within 3 years were coded with a 0. Although similar to the outcome variable, earned associate's degree, this variable is different because earning an associate's degree in three years time is a common metric used by community colleges to determine student retention.

Students have Taken a Developmental Education Course. Developmental education courses are designed for students as foundation classes in math, reading, and writing to provide support to prepare students for college-level classes. Developmental courses do not count for credit or towards degree plans, but do prepare students for college-level courses. Students

enrolled in these courses often tested below the required score for entry into a college level class, had a low high school GPA needed for college entry, or placed below required score on various placement exams. This variable is a dichotomous variable in which students either did (1) or did not (0) take developmental courses.

Total Semesters Enrolled in Higher Education. This is a continuous variable to show how many total semesters students were enrolled in higher education institutions within 6 years. Number of transfer institutions: This is a continuous variable with a mean of 1.31 (SD=.020) with the minimum number of transfers being 1 and the maximum being 11.

Transfer Institution Type. This variable is a categorical variable with two different options to account for different types of transfer institutions and patterns; students that transferred to a four-year public institution or students that transferred to a different type of institution, including four-year private, two-year public, and for-profit. Most frequently, students transferred from a community college to a four-year public institution *n*=742 (68.8%) and *n*=339 (31.3%) transferred to another type of institution.

Enrollment Intensity. The variable enrollment intensity was developed from the longitudinal data on course taking by taking the average of all level of enrollments for each semester in which a student was enrolled in higher education. The National Student Clearinghouse codes enrollment level in 6 ways. Full time, half-time, three-quarter time, less than half-time, leave of absence, withdrawn, or deceased. To find the mean, I assigned full time to 4, half time to 3, three-quarter time to 2, less than half time to 1, and leave of absence and withdrawn to 0. There were no deceased students in this sample. To find each student's mean enrollment intensity, totals based on assigned numeric codes to enrollment intensity were added together for each reported enrollment in the past 6 years. Then, the total was divided by total

semesters enrolled. In this sample, the mean enrollment intensity was $M = 3.1$, $SD = .018$). The maximum intensity reached was 4 and the student average with the smallest intensity in the dataset was .14.

Data Analysis Approach

Data were collected using two reports obtained by City Community College. The first report in an internal report from their learning management systems used by the college to track student data. It was combined with information found in the second report that is made available to institutions from the National Student Clearinghouse and provides detailed enrollment and graduate data from all institutions that report to the Clearinghouse, a service that reaches 99% of students enrolled in public and private institutions.

To analyze the relationship between the independent variable outcomes, binary logistic regression techniques were used, because the outcomes were dichotomous. Logistic regression allowed the researcher to predict outcome variables by utilizing different variable types, like continuous and dichotomous. Additionally, logistic regression will be used to determine if a predication equation exists for determining community college transfer student success and degree attainment. After identifying only transfer students within the 2013 City Community College cohort, independent variables were then assessed to determine their relationship with dependents variables; earned associate's degree or earned bachelor's degree. Since race is a categorical variable with several categories, White was used as the constant in the analysis. Additionally, the National Student Clearinghouse uses a wider variety of race categories such as, White, Black or African American, Hispanic, More than 1 Race Reported, American Indian or Alaska Native, and Asian, race categories in this study were consolidated into White, Black or African American, Hispanic, and Other. Similar to race, the categories of transfer institution

type was also consolidated to include four-year public institution, and then all other institution types.

Data analysis was conducted utilizing SPSS 27.0 statistical software program. Descriptive statistics were also utilized to support the regression findings in this study. In utilizing the descriptive statistics, this provided an overview of the samples demographics characteristics such as gender, age, race/ethnicity, number of intuitional transfers, prior enrollment in concurrent courses, taken a developmental education course, earned associate's degree in 3 years, earned bachelor's degree in 6 years, total semesters enrolled at a community college, total semesters enrolled in higher education, enrollment intensity and transfer institution type.

CHAPTER FIVE:

RESULTS

Restatement of Purpose and Hypotheses

The purpose of this study was to explore the characteristics among community college to four-year institutions transfer students associated with graduation, using data from students attending a City Community College in Oklahoma. Transfer students across the nation are a growing cohort of students in higher education and there is a clear gap in the literature when it comes to analyzing community college to four-year institution graduation. This study explored characteristics among community college transfer students associated with graduation.

This study was guided by the following research questions and hypotheses:

RQ 1: What factors predict likelihood of bachelor's degree graduation for community college transfer students?

H1: Community college students who earn an associate's degree before transfer are more likely to earn a bachelor's degree from a four-year institution.

RQ 2: Is there a difference in the likelihood of degree attainment (both bachelor's and associate's) depending on transfer institution type?

H2: Community College students that transfer to a four-year public institution are more likely to have earned their associate's degree before transferring than those that transfer to other types of institutions: two-year public, four-year private, and/or for-profit.

H3: Community College students that transfer to a four-year public institution are more likely to earn their bachelor's degree than those that transfer to other types of institutions: two-year public, four-year private, and/or for-profit.

Findings for Research Question 1

To answer research question 1, data was analyzed using logistical regression. Logistic regression is most appropriate for a study of dichotomous outcome variables (Peng et al., 2002) and yields estimates in odds-ratios which are interpreted as the likelihood of group membership (in this case bachelor's or associate's degree recipient) given a set of covariates. For this particular analysis, exploring the association between community college student characteristics and bachelor's degree attainment was interpreted in terms of odds of completing a bachelor's degree (or associate's degree) in 6 years.

As described in Table 2, the sample of participants in this study were comprised of community college transfer students that enrolled in Fall 2013. The demographic breakdown of this student population consisted of 49.7% females and 50.2% males, for a total of 1082 students (1 student missing data on gender). Of this sample, the majority of students initially enrolled at the community college directly following high school graduation, with a mean age at first enrollment being 19.69; therefore, most students were between the ages of 21-25 at the time of transfer to a four-year institution. Additionally, the study found that 42.3% of students were of color, Black or African American, Hispanic, or other race/ethnicities. Approximately 57 percent of students reported that they were White. In the logistic regressions ran for both question one and question two, the white racial category served as the comparison group for race. The descriptive statistics indicated that, on a scale of 0 – 4, the mean enrollment intensity for this sample was 3.102.

The results of the logistic regression analysis of bachelor's degree completion are presented in Table 3. The logistic regression indicated that the overall model fit was good and

Nagelkerke R^2 , as a pseudo r-squared measure at .573, indicates that the model was robust in explaining variation in the outcome. Furthermore, the model correctly classified 83.9% of the

Table 3

Logistic Regression: Independent Variables and Bachelor's Degree Completion

Variable	β	*SE*	Wald	Sig.	Odds Ratio
Gender: Female	.011	.176	.004	.948	1.012
Enrollment Intensity	1.590	.198	64.719	.000***	4.903
Transfer Institution Type: Four-Year Public	.473	.216	4.819	.028*	1.605
Number of Institutions Transferred to	-.014	.143	.010	.920	.986
Total Semesters Enrolled in Higher Education	.325	.025	166.211	.000***	1.383
Semesters Enrolled at Community College	-.259	.038	47.692	.000***	.772
Earned Associate's Degree	.158	.218	.522	.470	1.171
Race: Black	-.410	.350	1.376	.241	.664
Race: Hispanic	-.003	.294	.000	.993	.997
Race: Other	-.156	.203	.589	.443	.855
Age at First Fall Enrollment	.003	.020	.022	.883	1.003
Previous Enrollment in Concurrent Courses	.372	.210	3.154	.076 ~	1.451
Previous Enrollment in Dev. Ed. Courses	-.075	.185	.164	.685	.928
Earned Associates in 3 years	1.046	.229	20.798	.000***	2.848
Constant	-8.871	.932	90.641	.000***	.001

***$p \leq .001$, **$p \leq .01$, *$p \leq .05$, ~ $p \leq .10$

cases, whereas the null model or default classification was 55% of cases. Wald statistics were used to test the relative magnitude of each variable relationship with the outcome, with higher Wald statistics indicating a stronger relationship. As shown in Table 3, the Wald statistics indicated that total semesters enrolled in higher education, enrollment intensity, total semesters enrolled at community college, earned associate's degree in three years and transfer to a four-

year public institution were the variables with the strongest relationship to the outcome (in that order).

Enrollment intensity was found to be an important predictor of bachelor's and (associate's) degree completion. For every unit increase in enrollment intensity (moving from part-time to full-time for example), students were 4.9 times more likely to have completed their bachelor's degree in 6 years. Furthermore, transfer to a four-year public institution was found to be a significant predictor of earning a bachelor's degree. Of the 1,081 students included in this sample, 68.8% transferred to a four-year public institution, while 31.3% transferred to another institution: either a two-year public, four-year private, or for-profit college. In the regression analysis, students that transferred to a four-year public institution were 60% more likely to earn a bachelor's degree, $OR = 1.605$, $SE = 0.216$, $p < .05$.

Furthermore, it can be concluded that more semesters enrolled at a community college was not positively associated with bachelor's completion. For every semester enrolled at the community college, there is a corresponding decrease in odds of earning a bachelor's degree of approximately 20%, $OR = .772$, $SE = 0.038$, $p < .001$. However, the total number of semesters enrolled in higher education was positively associated with bachelor's completion, $OR = 1.383$, $SE = 0.025$, $p < .001$. Somewhat not surprisingly, there was a positive association between earning an associate's degree in 3 years and odds of earning a bachelor's degree, however just having earned an associate's regardless of time was not, $OR = 1.171$, $SE = 0.185$, $p = .470$. In fact, community college students who earned an associate's degree in three years were 2.8 times more likely to complete their bachelor's, $OR = 2.848$, $SE = 0.229$, $p < .001$.

Additionally, the logistic regression analysis indicated that enrollment in developmental education courses at a community college was related to successfully completing the bachelor's

degree, *OR* = .928, *SE* = 0.185, *p* = .685. However, enrollment in concurrent courses was marginally related to bachelor's' degree completion, as students that were enrolled in concurrent courses in high school were approximately 50% more likely to earn a bachelor's degree *OR* = 1.451, *SE* = 0.210, $p < .10$.

Thus, in considering Hypothesis #1, community college students who earn an associate's degree before transfer are more likely to earn a bachelor's degree from a four-year institution, I conclude that the findings, overall, do not support Hypothesis 1; however, it is worth noting that while simply earning the associates is not associated with bachelor's completion, earning the associate's degree within three years is associated with successful bachelor's completion.

Findings for Research Question 2

The question occupying research question 2 was whether or not there was any difference in the likelihood of both associates and bachelor's completion if community college students graduated from a 4 year institution versus another type of institution. Since a portion of this question was already answered by the regression analysis above, we'll begin with Hypothesis 3 and then follow with an analysis with earned associates as the outcome in order to answer Hypothesis 2. For the associate's degree analysis, the same predictors (minus earned associates in 3 years) were used in a logistical regression.

Beginning with descriptive statistics regarding the types of institutions students transferred to, we see that 75.7% of students transferred one time or less, 19.3% of students transferred at least 2 times, and 5% of students transferred 3 or more times. Similarly, we see that 68% of community college students transferred to a 4-year public institution while the other 32% transferred to a 2-year public, 4-year private, or for-profit institution. In returning to Table

3, the results of the logistic regression for bachelor's degree completion, we see that the answer to Hypothesis #3 is that students that transferred to a four-year public institution were 60% more likely to earn a bachelor's degree, *OR* = 1.605, *SE* = 0.216, $p < .05$. We can therefore conclude that Hypothesis 3 was supported.

Table 4

Logistic Regression: Independent Variables and Earned Associate's Degree

Variable	β	*SE*	Wald	Sig.	Odds Ratio
Gender: Female	.185	.160	1.329	.249	1.203
Enrollment Intensity	1.306	.173	56.688	.000***	3.690
Transfer Institution Type: Four-Year Public	.933	.188	24.537	.000***	2.541
Number of Institutions Transferred to	.-.051	.119	.182	.670	.951
Total Semesters Enrolled in Higher Education	.047	.018	6.792	.090~	1.048
Semesters Enrolled at Community College	.427	.035	144.686	.000***	1.532
Race: Black	.209	.339	.379	.538	1.232
Race: Hispanic	.343	.277	1.528	.216	1.409
Race: Other	.091	.186	.241	.623	1.096
Age at First Fall Enrollment	.014	.020	.516	.473	1.014
Previous Enrollment in Concurrent Courses	-.176	.189	.866	.352	.838
Previous Enrollment in Developmental Education Courses	-.493	.169	8.556	.003*	.611
Constant	-8.387	.834	101.206	.000***	.000

*** $p \leq .001$, ** $p \leq .01$, * $p \leq .05$, ~ $p \leq .10$

The evidence needed to assess Hypothesis 2 is found in Table 4. The logistic regression indicated that the overall model fit was good, the Nagelkerke R^2, as a pseudo r-squared measure at .606, indicates that the model was robust in explaining variation in the outcome. Furthermore, the model correctly classified 84.3% of the cases, compared to the null model or default of 51% of cases correctly classified. As shown in Table 4, the Wald statistics indicated that enrollment

intensity, total semesters enrolled in community college, transfer to a four-year institution, and enrollment in developmental education courses were the most strongly related to the outcome (in that order).

First and foremost, transfer to a four-year public institution was found to be a significantly related to earning an associate's degree, $OR = 2.541$, $SE = 0.188$, $p < .001$. Not surprisingly, enrollment intensity was significantly related to associate's degree completion, $OR = 3.690$, $SE = 0.173$, $p < .001$. In other words, for each increase in average status (for example part-time to full-time), students were 3.6 times more likely to earn an associate's degree. However, after analyses, it was concluded that the number of institution transfers is not related to associate's degree completion, $OR = .951$, $SE = 0.119$, $p = .670$. However, the time spent enrolled at a community college was significantly related to an earned associate's degree, $OR = 1.532$, $SE = 0.035$, $p < .001$. In other words, for each semester they are enrolled at a community college, students were 1.5 times more likely to earn an associate's degree. In this sample 23.8% of students has a prior enrollment of concurrent courses, while 76.2% did not have any previous enrollment in concurrent courses; however, the findings reveal that prior enrollment in concurrent courses was not significantly associated with associate's degree completion, $OR = .838$, $SE = 0.189$, $p = .352$. Community college transfer students with prior enrollment in developmental education courses were 99% less likely to earn an associate's degree, $OR = .611$, $SE = 0.169$, $p < .01$.

When considering hypothesis 2, community college students that transferred to a four-year public institution are more likely to have earned their associate's degree than those that transferred to other types of institutions: two-year public, four-year private, and/or for-profit, there was, in fact, evidence to support this claim. Therefore, hypothesis 2 was supported.

Finally, as mentioned earlier, when considering hypothesis 3, community college students that transfer to a four-year public institution are more likely to earn their bachelor's degree than those that transfer to other types of institutions: two-year public, four-year private, and/or for-profit, the findings revealed that students that transferred to a four-year public institution were significantly more likely to earn their bachelor's degree. Therefore, hypothesis 3 was also supported.

CHAPTER SIX:

DISCUSSION, IMPLICATIONS, AND SUGGESTIONS FOR FUTURE RESEARCH

The purpose of this study was to explore the characteristics among community college to four-year institutions transfer students associated with graduation, using data from students attending a community college in Oklahoma. There were two guiding research questions used in this study 1) What factors predict bachelor's degree graduation for community college transfer students? and 2) Is there a difference in degree attainment (both bachelors and associates) depending on transfer institution type? From these questions, the following hypotheses were developed: 1) Community college students who earn an associate's degree before transfer are more likely to earn a bachelor's degree from a four-year institution 2) Community College students that transfer to a four-year public institution are more likely to have earned their associate's degree than those that transferred to other types of institutions: two-year public, four-year private, and/or for-profit and 3) Community College students that transfer to a four-year public institution are more likely to earn their bachelor's degree than those that transfer to other types of institutions: two-year public, four-year private, and/or for-profit. This chapter provides discussion surrounding the findings identified in the previous chapter and will be followed by implications for research, policy, and practice, a discussion of the study limitations and suggestions for further research.

Summary of Results and Discussion

This study explored the characteristics among community college to four-year institutions transfer students associated with graduation in the hopes of helping inform institution staff, faculty, and administrators of characteristics that could serve as early-identifiers of graduation completion. Based on the literature, variables such as student age,

enrollment intensity, and gender may influence degree attainment in community college transfer students (Sissel, Handsman & Kasworm, 2001; Laird & Cruce, 2009; Conger & Long, 2010). After careful consideration of the literature, suggested barrier characteristics were included as variables in this study, along with other frequently measured variable used by City Community College and the National Student Clearinghouse. With this research in mind, it is necessary for higher education institutions to look at student characteristics and implement support systems and strategies to allow for an increase in degree completion for community college transfer students.

When considering Hypothesis #1, the findings showed that students who earned an associate's degree at any point before transfer to a four-year institution was not associated with an earned bachelor's degree. However, students that earned an associate's degree within three years was significantly associated with bachelor's degree completion at the four-year institution. This result suggests the sooner students earn their associate's degree and transfer to a four-year institution, the more likely they are to earn a bachelor's degree. That idea was further supported with findings in this study of time enrolled at a community college being negatively associated with bachelor's degree completion. The more time students spent enrolled at a community college, they less likely they were to earn a bachelor's degree from a four-year institution.

In making further sense of these findings, there is one important consideration. The literature surrounding associate's degree completion and transfer or earned community college credits for transfer varies greatly because not all schools have articulation agreements concerning which credits can be accepted. For example, even if a student has previously earned their associate's degree, it is possible that not all of those credits will be accepted into a bachelor's degree at a four-year institution. Community colleges and four-year institutions that

generally have the more well-established articulation agreements, are schools that have the most transfer students shared between them. These institutions are generally close in proximity, allowing for little distance traveled for the student. With an established articulation agreement in place, students are much more likely to transfer credits from a community college to four-year institution. In concordance with Monaghan and Attewell (2015), students that transfer almost all of their credits from a community college are much more likely to earn a bachelor's degree. In looking at this study's particular data, and finding that earning an associate's degree before transfer is not significant, one can assume that strong articulation policies are not well-established or, more simply, that earning an associate's is not critical to earning a bachelor's degree. So, for future research, it may be important to consider including the strength of articulation agreement as a moderating variable in investigating the role of associate's degree and time enrolled in bachelor's degree completion.

In contrast, the study findings supported Hypothesis #2—Community College students that transfer to a four-year public institution are more likely to have earned their associate's degree than those that transferred to other types of institutions: two-year public, four-year private, and/or for-profit. Specifically, the findings demonstrated a positive relationship between four-year public institution transfer and associate's degree attainment. As stated in the literature and the theoretical framework, institutional commitment is critical to community college student transfer success. In response, different types of institutions have varying levels collaboration and streamlined transfer processes and policies. For examples, institutions with a high number of articulation agreements and established pathways, has more collaboration than two institutions with no agreements. Therefore, findings from this study suggest that community

colleges and four-year public institutions may have more collaboration in comparison to community colleges and other two-year public, four-year private and/or for-profit institutions.

Finally, Hypothesis #3 was also supported, showing that students who transferred to a four-year public institution were significantly more likely to earn their bachelor's degree in six years. Similar to Hypothesis #2, it can be assumed that community colleges and four-year public institutions have greater levels of institutional collaboration as compared to other types of institutions. The literature suggests that great collaboration can lessen transfer shock and lead to a stronger institutional commitment, increasing likelihood of bachelor's degree completion, as depicted in the model in Figure 1. These are important findings, as there is little literature surrounding transfer institution type. Typically, in the literature, using a four-year public institution as the primary variable is the most common due to availability and large sample size, ignoring all other institution types. As a result of this, it can be suggested that further research, including transfer institution type as a stand-alone variable could help institutions learn about community college transfer supposed based on institution type.

With respect to other findings of the main analyses, there are some notable points of discussion. In a previous study, Moumouris (1997) found that as the age of the student increased, the likelihood of degree completion decreased which could be attributed to the scenario of older students enrolling part-time in order to care for familial responsibilities. While other studies have argued that older students are unfairly labeled and are just as academically successful when specialized supports are in place (Sissel, Hansman & Kasworm, 2001; Smith & Pourchot, 1998). For instance, although many institutions originally targeted recruitment of students towards traditional-aged students, as the population of adult learners has increased across the nation, institutions have redesigned how they support adult learners. In this study,

student age at the first fall enrollment at City Community College was not predictive of either a bachelor's degree or associate's degree attainment. While the median age of students included in this study were of the average age of 19, City Community College still has many adult learners, and learners with outside responsibilities such as family obligations and employment. In response to this, there are specialized supports in place for this population, which may explain why this study didn't find a significant association between these two variables.

Similar to student age, race/ethnicity and gender were not found to be predictive of bachelor's or associate's degree attainment in this study. When reviewing the literature, race/ethnicity is a frequent variable included in studies about graduation rates, however, depending on the variables it is combined with, or other individual factors related to the studies, race/ethnicity is sometimes significant, while other times it is not. For example, Magino (2014) found that Black Americans were statistically less likely to earn a bachelor's degree in comparison to White students. However, when parent income and gender were introduced as contributing variables, race was no longer significant and nearly equal to White student degree attainment. This may suggest that race/ethnicity as a stand-alone variable is not a predicting indicator when it comes to degree attainment, however, when combined with other variables it can become predictive.

Although gender is a frequently used variable in higher education studies, consistent with other research (Fredrickson, 1998, Moumouris 1997, Underwood, 1998), gender was not a predictive variable in predicting degree completion. However, the literature did suggest that males students are more likely to successfully transfer to a four-year institution (Holaham, Green and Kelly, 1983, Grubb, 1989). Additionally, other research suggests that females attend two-year colleges at a higher rate and more males graduate. In comparing to this study, that is

not the case. Males and females were approximately distributed evenly across this sample and gender was not a significant predictor of degree completion.

While the literature found few studies solely focused on part-time and full-time students, the National Center for Education Statistics (2020) has found that nearly 25% of students are enrolled part-time. Despite this growing population, part-time enrollment is a stand-alone variable that has been studied very little, as most reports include only full-time student information (Stratton et al., 2004; Laird & Cruce, 2009). In this study, enrollment intensity was found to be significantly associated with an increase in odds of both associate's and bachelor's degree completion. The closer students stayed to a full-time enrollment status, the greater likelihood they would earn either degree.

As expected, community college students that wish to obtain a bachelor's degree must transfer to a four-year institution. However, oftentimes, students transfer to multiple institutions for a variety of reasons including financial reasons, moving back home, to find an institution where they feel as though they belong, or to find an institution that offers their preferred major (Moldoff, n.d.). However, after analyses, it was concluded that the number of institution transfers is not a predictive variable in degree completion. There is a substantial amount of literature focusing on transfer shock, a phenomenon that can simulate a crisis when students change institutions (Ivins et al., 2017; Rhine et al., 2000; Schlossberg, Goodman, & Anderson, 2006). However, research on transfer shock varies widely on if the shock is detrimental or helpful to transfer students. Based on results of this current study, community college students should transfer to a four-year public institution, but the number of transferring institutions does not matter.

The time spent enrolled in their education, and also time spent at a community college, were variables studied in this analysis. Semesters enrolled in higher education includes both time enrolled at a community college and four-year institution. The average of time spent enrolled in higher education was 13.96 semesters. The National Center for Education Statistics reported that forty-four percent of 2015–16 first-time bachelor's degree recipients completed their degree 48 months or less, which approximately comes out to 9.5 semesters (U.S Department of Education, 2019). According to this study, the time spent enrolled in higher education proved to be a positive significant predictor of both associate's degree and bachelor's degree attainment. Ishitani (2008) found that sophomore and junior transfer students are 73% less likely to depart than freshman transfer students. Ishitani's conclusion aligns with this study as it suggests that the more time students are enrolled in higher education, the more likely they are to persist.

Additionally, the average amount of time students in this sample spent at community college was 6.64. Typically, associate's degree programs at community colleges across the nation take 2 years, or 4 semesters to complete. However, today, students are taking longer to complete their degrees as indicated in this sample and on national trends. Nationally, students are taking 3.3 academic years of full-time or full-time equivalent enrollment to earn an associate's degree (Shapiro et al., 2016). In this study, the more semesters students were enrolled at a community college was related to both associate's and bachelor's degree attainment. However, there was a negative relationship between time spent at a community college and bachelor's degree completion and a positive relationship between time spent at a community college and associate's degree completion.

Concurrent enrollment, or sometimes called dual enrollment, is when students can earn transferable college credit while simultaneously being enrolled in high school. According to the literature, there are several studies that consistently show that concurrent enrollment is a positive significant predictor of bachelor's degree attainment (Brian, 2012; What Works Clearinghouse, 2017; Allen & Dadger, 2012). In this study, that same results were found. While concurrent enrollment was not a predictor of associate's degree attainment, it was a significant predictor in bachelor's degree attainment. This could be due to the fact that students had more time to adjust to the rigors of academic coursework since they began in high school. Gose (2017) indicated that transfer shock is lessened as students are provided more time to adjust to their surroundings overtime instead of a sudden change.

Developmental education courses, often referred to as remedial courses, are courses designed to better prepare students for college-level reading, writing, or math. Typically, these students have been placed in these courses by the institution due to low standardized test scores. The Center for Analysis of Postsecondary Readiness found similar results, indicating that students starting at a community college and enrolling in developmental education courses, have a much lower likelihood of completing a bachelor's degree. In their study, using a nationally representative sample, they found that 20% of students previously enrolled in developmental education courses earn an associate's degree and only 9% of students previous enrolled in developmental education course earn a bachelor's degree (Center for Analysis of Postsecondary Readiness, 2015). Compared to this study, students that had previously enrolled in developmental courses was a significant indicator of associate's degree attainment with a negative relationship, however, developmental courses was not significant for bachelor's degree completion. One explanation for this could be that this sample is made of community college

transfer students. If students begin their degree at a community college, they have likely completed all developmental education courses at the community college before transfer to a four-year institution.

Implications for Research, Policy, and Practice

In the study, the conceptual and theoretical framework is viewed through a lens of Tinto and Bean and Metzner's theories to help explain the transfer process for community college students transferring to a four-year institution. In referring back to Figure 1, this conceptual model was designed to depict community college matriculation to bachelor's degree graduation, and what students may face along the way, however, only a small portion of that path to degree will be studied in this research, as shown in Figure 2. This model can serve as a guide for institutions for further research in promoting community college transfer student success. Much research is still needed to support community college to four-year institution transfer students. Specifically, variables identified in the literature but not analyzed in this study include: academic performance after transfer, student mindset and integration into the transferring institution, institutional commitment, and factors that lead a transfer student to drop out or bachelor's degree graduation. These all could be included in future studies which expand upon the conceptual framework developed in this paper.

A number of implications for policy and practice can be utilized based on the data from this study. One recommendation is that institutions across that state share data when it comes to transfer mobility and graduation rates. Specifically, institutions could track student progress on a semester-by-semester basis. This would help ensure that students are on track to transfer and not wasting valuable time and money taking classes they do not need to transfer. At this time, most of this data is kept internal and not shared among intuitions, even institutions with a high

rate of transfer student exchange. There are a variety of reasons why institutions may not choose to share data including competition for students, however, the main reasons include cost of a common data-tracking software and the manpower that would be essential to keep this program going. If institutions were willing and able to share transparent data, this could dramatically improve transfer mobility throughout the state system and hold institutions accountable for maintaining current and student-focused transfer policies and procedures. Furthermore, this data can help institutions identify community college students early on, if they plan to transfer. After being identified, the transferring institution can connect this student to academic advising, remind students of important registration dates, and begin to acclimate the student to the transferring institution in hopes of reducing transfer shock.

As political pressure on college affordability continues to rise, it is expected that community college enrollment will increase in the coming years. As a result, it is more important than ever to support transfer students and the commitment to transfer should be apparent in all community colleges mission and strategic priorities. In recognition of this pressure, community colleges have begun to develop creative ways to facilitate transfer. Literature suggests that degree tracks are beneficial for student success, however, sometimes these tracks at a community college are too rigid and formulated specifically with a goal of earning an associate's degree. Oftentimes, community college students are encouraged to earn an associate's degree before transfer, but as indicated in this study, that is not significant to bachelor degree completion. Today, many students enter a community college with hopes of transfer to earn a bachelor's degree. Implementation of a general education track at community colleges could be highly beneficial and specifically designed for students that wish to transfer, as long as it aligns with courses accepted at four-year institutions. With this idea, students at a

community college are not forced to choose a specific associate's degree track when they have no intention of earning one in the first place. A general education certificate could allow students to only take the courses at a community college that need to transfer to a specific degree at a four-year institution, saving the student from a great deal of financial stress. Instead, students will be able to transfer to a four-year institution at the most opportune time to transfer, as compared to taking unnecessary courses not required for a bachelor's degree. Additionally, the general education certificate articulation agreements should be widely marketed and accessible on both community colleges and four-year institutions website and publications.

Furthermore, community colleges and universities must make articulation agreements a top priority and develop policies that are robust, continually updated, and easy to understand for students. These articulation agreements should be available for both concurrent and community college students so they can be better informed on course transfer policies across that state, or to frequently transferred institutions. These agreements will allow students to move seamlessly between institutions saving both time and money by not wasting their tuition dollars on courses they do not need to meet their end goal. Community colleges and four-year institutions must work together to decide on necessary courses. For example, if a certain course is not required at the four-year institutions, community colleges should not require their students to take it. In doing so, this will help decrease the number of non-transferrable credits.

Based on this research, students that take developmental education courses at a community college are at a severe disadvantage when it comes to bachelor's degree completion. Because of this outcome, it can be assumed that developmental courses are either not effective or lead to burn out and drop out since developmental courses do not count towards course credit. Furthermore, students enrolled in developmental education courses are often encouraged

to or forced to take fewer credit courses until remedial courses are complete. However, this study shows that students that remain closer to full-time enrollment are more successful. Institutions must examine their current developmental education policies and figure out why they might not be effective. Based on that information, colleges will be able to determine what changes need to be made or if these courses are even necessary.

Limitations and Delimitations

This study utilized data from the 2013 cohort of transfer students at City Community College to identify characteristics among community college transfer students associated with graduation. The specific characteristics, or variables, examined were: age, gender, race/ethnicity, enrollment intensity, number of transfer institutions, prior enrollment in concurrent courses, prior enrollment in developmental education courses, earned associate's degree in 3 years, total semesters enrolled in community colleges, total semesters enrolled in higher education and transfer institution type. While these variables may aid in predicting student persistence, there may be other variables not included in this study that are also strong predictors of graduation. Access to a wide-variety of important predictor variables in this analysis was robust but not completely comprehensive. For example, it is possible, and may be very likely, that there are other variables and characteristics that directly contribute to community college transfer student graduation such as institution partnerships, community college courses hosted on a four-year campus, or dual institution academic advising.

Another limitation is that risk factor variables identified in the literature that could impact successful transfer or graduation like, transfer shock, articulation agreements, outside employment, or student involvement are either not included in this dataset, or not tracked by the institution. In referencing the model and conceptual framework in this study, there are still

variables left to be explored. Much of the literature focuses on the student's relationship with their current institution. Tinto (2000) found that high classroom performance is a result of a positive academic involvement which can lead to other campus and community involvement. This study did not track student relationship with institution or campus involvement, which are variables that could lead to different findings and suggestions in terms of transfer student support.

Additionally, there are limitations in the dataset, because all of the data is collected using a cohort of students from one community college, which means this study is not representative and therefore not generalizable. The causes of influence could have an effect based on the climate and culture of the institution. Institution administrators, faculty, support staff, and even state governmental support may play a role transfer student support and available funding. Additionally, the generalizability of findings are limited to students that first enrolled at a community college and it does not include four-year to four-year institution transfer students or reverse transfer students. This study could be much more robust with data from several institution, including both community colleges and four-year institutions. This would allow researchers to gather data and compare information from before student transfer and after. Also, data from another academic year, instead of the 2013 cohort could yield varying results depending because student demographics and characteristics often change year to year. Additionally, transfer information was provided from the National Student Clearinghouse. Although they serve 99% of students in public and private institution, there are still institutions where data is not tracked.

City Community College is located in an urban city with approximately 15,000 enrolled students, of which nearly two-thirds of that student population is enrolled part-time. This study

found that students enrolled closer to full-time status are more likely to earn a degree. Therefore, community colleges across that nation with varying levels of student enrollment status may yield different results. Within this urban environment, there are four four-year institutions in close proximity, which eliminates extensive travel for community college students that choose to transfer. However, since City Community College is located in a large city, it attracts many students that work full-time and also attend the community college. As a result, not all students are seeking a degree so university transfer is not the main focus; workforce and continuing education are competing course options. Additionally, this sample might not be comparable to other community colleges throughout the country because of student demographics, cultural differences, and geographical bias.

This study tracked students that entered a community college until 6-years after initial enrollment. However, with so many part-time learners, studies show that a percentage of students may now be taking longer than six years to complete a bachelor's degree, which is another limitation of this study. For example, in a study by the U.S. Department of Education (2001), reported that in the 1999-2000 first-time bachelor degree student cohort, 14% of students took 6-10 years to complete a bachelor's degree from the time of entry in postsecondary education, and another 14% took over 10 years. Since this study did not account for students taking over six-years to complete, it may have not included students that took time off from courses, students that took extra time in deciding a major, or students who had to take a substantial amount of developmental education or remedial courses, that do not count for credit.

Suggestions for Further Research

While this study does address a gap in the current literature regarding the characteristics among community college to four-year institutions transfer students associated with graduation,

additional research is required in this area. For instance, the quantitative nature of this study did not allow for analysis of the student experience or psychological factors that may have had an effect on failure to persist. A future qualitative study may yield more in-depth results as to the way students feel during the transfer process and how supported they feel. Additionally, a qualitative study would allow for interviews to determine how many students wished to transfer versus how many students had no intention of transferring to a four-year institution following their community college education. A qualitative study to include focus groups and interviews of community college and four-your year institution academic advisors, faculty and administrators may be beneficial in improving transfer student achievement. The literature suggests that institutional collaboration is imperative for transfer student success; in extending transfer research to institution staff and faculty, researchers may be able to better understand barriers and support systems and hinder and improve transfer success.

Additionally, the data for this study was collected from one institution. Researchers utilizing a nationally representative sample may be able to identify characteristics associated with graduation of community college to four-year institutions transfer students on a larger level. A larger dataset with additional variables comparing different types of transfer students would also contribute to the literature on transfer students. Since this study relied on characteristics from students in one state/region of the country, it is likely these characteristics are not similar across the United States. Also, although there is much research identifying transfer student barriers, no substantial effort has been made to solve these problems and there is little research to include proven support strategies. Therefore, further research is needed on community college to four-year institution transfer support practices and how to eliminate the problem of low transfer student academic success.

Another further area of inquiry might be to examine student transcript data specifically pertaining to student's major. For example, a researcher could explore if certain majors are more easily transferred and credits accepted across institutions. Are there common majors that are accepted most widely across institutions? What core courses are most accepted as credit to other institutions? By looking at this transcript data more closely, this would give insight on the effectiveness of transfer articulation agreements between institutions. Finally, community college students that are enrolled in developmental courses could be included as a stand-alone variable in a robust study concerning developmental education and bachelor's degree completion. This study revealed that developmental education is detrimental to bachelor's degree attainment, however, there is little literature to explain the cause.

Findings from this study may inform higher education administrators and policy makers efforts to designing appropriate supports that could lead to better success for this community college to four-year institution transfer students and may support matriculation to four-year institutions by community college students. Additionally, those implemented supports may lead to more literature and better practice education, allowing a seamless transition from community college to four-year institution. Based on this research, it can be suggested that a higher enrollment intensity is an important predictor of both associate's and bachelor's attainment. In using these variables, as well as identifying other predictors of academic success, institutions can be better equipped to support the predicted growing cohort of community college to four-year institution students. In higher education's past, there was extreme competition for students which led to guardedness around transfer data, something which ultimately only punishes students. While competition still does exist, institutions must learn to work together to benefit students, institutions, and the state economy.

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APPENDIX A:

IRB OUTCOME LETTER

The UNIVERSITY of OKLAHOMA

Institutional Review Board for the Protection of Human Subjects

Human Research Determination Review Outcome

Date: November 19, 2020

Principal Investigator: Sarah Wyatt

Study Title: IDENTIFYING COMMUNITY COLLEGE TRANSFER STUDENT CHARACTERISTICS ASSOCIATED WITH PERSISTENCE AND GRADUATION FROM A FOUR-YEAR INSTITUTION

Review Date: November 19, 2020

I have reviewed your submission of the Human Research Determination worksheet for the above-referenced study. I have determined this research does not meet the criteria for human subject's research. The proposed activity involves the analysis of de-identified data. Therefore, IRB approval is not necessary so you may proceed with your project.

If you have questions about this notification or using iRIS, contact the HRPP office at (405) 325-8110 or irb@ou.edu. Thank you.

Cordially,

Ioana Cionea, Ph.D.
Vice Chair, Institutional Review Board