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Post-Application Factors Affecting Community College Enrollment

Kyle L. McCarrell

A dissertation submitted to the Graduate Faculty of

JAMES MADISON UNIVERSITY

In

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Abstract

For many open-enrolled higher education institutions, including community colleges, enrollment is dropping each semester creating significant financial challenges. While much research literature focuses on four-year colleges, little is known about the students who seek to enroll at community colleges. What is known is often evaluated using college choice theoretical models, e.g., Hossler & Gallagher (1987), that focus on a limited, and often linear, student experience. Contemporary evaluation models, including Perna (2006) and Iloh (2018), seek to expand college choice understanding by incorporating contextual matters that include the diverse experiences of potential students as they consider college. These contextual theories, with parallels to leadership literature, are used to inform and motivate this study in seeking to identify factors that may improve enrollment.

Utilizing application and FAFSA data from potential students who applied to a mid-sized community college in Virginia, the study uses logistic regression to consider the primary research question of whether students will enroll or not. By incorporating demographic, academic, socioeconomic, and family variables, five theoretically driven models were developed and analyzed to answer the research question. Results from these models indicate that gender, age, expected family contribution, student earnings, dependency status, and selected categories of race, academic goals, and admit types were statistically significant in predicting enrollment holding other variables constant. These findings provide insight regarding the decision-making of students at one open-enrolled community college with application and recommendations for enrollment managers, institutional leaders, and higher education practitioners.

Chapter One: Introduction

College education has become an integral part of the fabric of the United States' workforce and business community. The skills needed in the workforce are diverse and varied and for many, some type of college education is necessary for employment. Recent studies have indicated that by 2027, 70% of jobs in the United States will need to have some type of post-high school learning (Blumenstyk, 2020). For people who earn a college degree, their financial earnings improve as well (Abel & Deitz, 2019; Akhtar & Kiersz, 2019; Belfield & Bailey, 2011; Mayhew et al., 2016). Despite the many positive outcomes from a college credential, enrollment in post-high school education has fallen over the past 5-8 years. According to the National Student Clearinghouse Research Center (2020), aggregate enrollment dropped across all colleges and universities for eleven consecutive semesters between Fall 2015 and Fall 2020. This continues a downward trend that has resulted in a combined 11% drop in overall enrollment between 2011 and 2019 (Nadworny, 2019). This drop is of great concern within all higher education sectors due to its effect on all types of institutions, including community colleges (American Association of Community Colleges, 2019; Nadworny, 2019; Oakton Community College, 2018; Smith, 2018). In fact, community colleges are one of the sectors hardest hit by declining enrollments, dropping 14.4% between 2010 and 2017 (American Association of Community Colleges, 2019) with additional drops continuing each year through Fall 2020 (National Student Clearinghouse Research Center, 2020). In short, this continued drop in enrollment within higher education is problematic.

As with many phenomena, researchers have studied why enrollment is dropping, considering everything from a reduction in college-age students to economic and

workforce trends (Nadworny, 2019; Smith, 2018; Wood, 2019). Much of the research on enrollment patterns, however, utilizes data from four-year institutions that may not apply in two-year contexts. This underrepresentation in the literature is a significant problem considering that around 40% of all undergraduates attend community colleges (American Association of Community Colleges, 2020; Ginder et al., 2019; Perna, 2006). With such a large percentage of students beginning (or continuing) their educational career at a two-year institution, research focused on community colleges should assist in providing a greater understanding of these institutions and the students who enroll within them. As Perna (2006) states, “little is known about the process of deciding to enroll in a less than four-year postsecondary educational institution” (p. 145).

Similar to the lack of literature on student decision-making in community colleges is a lack of understanding of enrollment patterns within colleges. This is significant considering the many institutions, both public and private, that are heavily reliant on tuition dollars to maintain their budgets (Mader, 2018; Seltzer, 2018). Because of this, admissions policies and enrollment processes are increasingly scrutinized and researched as institutions compete for students. Like student decision-making research, much of the literature around enrollment patterns is concentrated in four-year institutions. However, there are significant differences between four-year and two-year institutions in this area. Many four-year schools have selective admissions policies while most community colleges have open enrollment policies, meaning that anyone can attend the institution regardless of high school grade point average, SAT/ACT scores, or other criteria. Because of these differences, additional research into the enrollment processes of community colleges and the students who consider attending them is warranted.

This study aims to look at student decision-making during a specific time in the enrollment lifecycle: the time between application and enrollment. While many studies focus on the recruitment of students to get them to apply, less is known about which students enroll, particularly in an open-enrolled community college setting, and what factors are important in their decision-making process. This transition from application to enrollment is significant to the institution due to the potential economic value coming from increased tuition revenue and the desire of the institution to be fiscally solvent. Thus, taking a critical look at a portion of the enrollment lifecycle can benefit both students and institutions.

Study Rationale

Enrollment policies and procedures can vary greatly between open-enrolled institutions, particularly in their approach to moving applied students to enrolled students. These requirements may or may not incorporate the unique, contextual needs of potential students as they embark on their college decision-making process (Cox, 2016). For many students, the onboarding process is a long, winding road filled with many potential detours, barriers, and delays. For some students, these are minor speedbumps; for others who may lack perseverance and/or grit, the hurdles become too great, the process too cumbersome, and the choice is made to quit before they ever attend a class (Cox, 2016; Sáenz et al., 2018).

This process of matriculation – i.e., the time between application and class attendance – provides challenges for many community colleges. Some research has found that over 40% of prospective students fail to enroll after applying to community colleges (EAB, 2018). Others have found the rate even higher: “We’re losing students who have

already applied to our colleges. We're losing over 50 percent of our students in the matriculation process" (Smith, 2018, para. 30). This article goes on to cite further research that "out of 100 students who apply to a two-year college, 56 are lost during onboarding...[which] begins from the moment a student completes an application to when they take placement tests, apply for financial aid, complete orientation, and register for classes" (Smith, 2018, para. 31).

Some community colleges have provided additional data around this problem. Oakton Community College (2018) in Illinois found that of their 5,311 applicants for Fall 2017, only 56% of students completed tasks leading to registration, and only 43% enrolled and paid their tuition. The yield rate – the number of attendees divided by the number of applicants – for Cisco College (2019) in Texas stood at 38% for 2018. Mt. Hood Community College in Oregon calculated in 2017 that they were losing 68% of their applicants before they could even get them to register for classes (Hubbard, 2019). Arizona's Mesa Community College (2013) set their goal to convert 30% of students from admission to enrollment indicating that actual yield was even lower. While these studies are not clear why students did not enroll (e.g., personal reasons, attendance at other colleges, etc.), the fact that these community colleges struggle to transition even 40% of applicants indicates that additional research in this area is warranted, not only for the potential economic benefits coming from increased enrollment, but also for the societal benefits that come to enrolled students.

Purpose

For open enrollment institutions like many community colleges, the enrollment process begins with an application that provides a wealth of often untapped and

underutilized demographic information. As students advance through this process, there are challenges or hiccups that may disrupt and even end their matriculation before they get to the first day of classes. Failure to complete the Free Application for Federal Student Aid (FAFSA), meet with an academic advisor, or complete necessary paperwork can delay or derail the enrollment process for these students. While there are a host of reasons outside the institution's control that can contribute to student non-enrollment, minimizing disruptions within the enrollment process should be of high importance to community colleges. Not only does this improve efficiencies for the college, but it also increases the odds a student, who has taken the time to apply, will ultimately enroll.

This research study will provide insight into student-centric information to assist community colleges in their own enrollment management decision-making. From this study, those involved with enrollment would be able to focus resources on those most likely to enroll, those who may need additional assistance, or some combination of the two. This has the potential to have significant economic implications for community colleges considering the increased reliance on tuition dollars coming from enrollment to balance the budget (Mader, 2018; Seltzer, 2018). If even 3% of applicants could be turned into attendees, the financial pressure for many institutions would be significantly reduced. As an example, Palm Beach State College (FL) indicated that increasing enrollment by 1% brings in an additional \$500,000 in revenue (Barrington, 2021). While each institution's budget is unique, any additional revenue is important for continued success.

Increasing matriculation has significant leadership implications for upper-level administrators as well. With an intensified emphasis on making college, particularly

community college, accessible to all, the importance of social leadership has expanded. This social leadership, though, is bounded by a healthy consideration of the individualized nature of an administrator's institution, including their broader geographic region, their place within the local economic engine, and most importantly, their students. Decision-making must be rooted in a deep understanding of the institution. As Iloh (2018) discussed, the truest results do not come from large data sets covering a variety of institutions across the country, but from individual institutions or even individual persons. By focusing on context and looking at data at this micro level, institutional leaders can gain a better understanding of their own potential student populations and make targeted decisions based on robust, individualized data instead of anecdotal beliefs or incorrect assumptions (Freling et al., 2020).

Statement of Problem(s)

Research regarding enrollment management (institution) and college decision-making (student) during the matriculation process is scant for two-year community colleges. Gaps persist regarding how and why students choose to apply and attend a particular institution. As colleges work to increase their enrollment to assist with budgetary challenges, this study aims to focus on the time between application to an institution and the time a student attends the first day of class. By focusing on conversion of known applicants to enrolled students, this study can help institutions make better data-informed decisions in their admissions processes.

Research Questions

Utilizing information gathered from the admissions application and subsequent data points prior to enrollment, this research study seeks to answer one primary question:

What student-level factors are associated with enrollment at an open-enrolled community college post application?

Additionally, this research study seeks to consider four secondary questions:

- a) *To what extent are demographic variables associated with enrollment post application?*
- b) *To what extent are academic variables associated with enrollment post application?*
- c) *To what extent are socioeconomic variables associated with enrollment post application?*
- d) *To what extent are familial variables associated with enrollment post application?*

Each of these questions can have a significant effect on the placement of personnel, time, and financial resources that an institution devotes to the enrollment process. To facilitate answering these questions, data from one mid-sized community college will be used to identify significant variables for non-enrollment. Chapter two provides a broad literature review documenting what is known regarding student decision-making and enrollment management. Chapter three details the methodology used to evaluate the variables in this study. Chapter four discusses the results while chapter five provides insights, considerations, and recommendations for higher education leaders whose focus is on enrolling potential students.

Chapter Two: Literature Review and Theoretical Framework

Higher education institutions continue to evaluate nearly every aspect of their institution (Dudenhoefer, 2018; Hogg & Hogg, 1995). Everything from admissions and enrollment (EAB, 2021) to the college's readiness to provide online education (Piña, 2017) falls within the purview of improvement. Even prior to the COVID-19 pandemic, colleges were evaluating themselves, but the pandemic forced many to consider even deeper changes to draw in more students (Jaschik, 2020). National research in these areas can provide broad guidance to better understand what is happening holistically in various areas (Clinedinst & Patel, 2018; Grawe, 2018; Newman, 2002). While this generalized data is helpful, each institution is unique in its processes, its organization, and most importantly, its students. As such, it is beneficial to consider more nuanced approaches within the admissions and enrollment sphere, particularly regarding how and why students make decisions regarding their college-going experience (Perna, 2006). Evaluating the relationships between students' background characteristics, institutional actions, and enrollments is necessary for colleges, and specifically community colleges, to maximize their value in providing students with the educational experience they desire (Bailey et al., 2015). To that end, this literature review begins by examining community colleges broadly. More specifically, I will focus on two aspects of the admissions and enrollment equation: enrollment management (institution) and college choice decision-making (student). A focus on developing a theoretical framework, grounded in leadership perspectives, will lead to a discussion regarding the variables included in this study.

Community College Missions and Their Realities

Community colleges, as compared with many baccalaureate institutions, are a

relatively recent addition to the higher education landscape. First beginning with junior colleges and later broadening to community colleges, new institutions developed and grew throughout the 20th century, with much of the growth coming during the population booms in the 1960s and 2000s (Cohen et al., 2014). As sociological elements within the American culture changed, a desire to provide some higher education – though not a full bachelor’s degree – for a broader population was born. Community colleges, grounded in a democratic ideal, filled this gap to provide a collegiate experience for all, focused on creating an affordable experience grounded in the needs of local communities. As Cohen et al. (2014) explain, access due to proximity explains the growth of community colleges, particularly in large, urban areas. Community colleges as neighborhood institutions expanded higher education more than accepting underprepared high school students. (Cohen et al., 2014). This focus on providing for neighborhood (i.e., community) needs is reflected in the mission statements of community colleges: upward transfer to 4-year institutions, technical and trade education, local workforce development, and community education. Because of these multiple missions that try to offer something for everyone in a region, community colleges recognized that everyone is a potential student (Cohen et al., 2014). To enroll large numbers of students, barriers to enrollment were minimized and open access – i.e., college-for-all – became the predominant admissions method for community colleges (see Cohen et al., 2014; Thelin, 2019).

While the mission of community colleges has changed little over time, the economics of community colleges continue to shift. Depending on the evaluation period, state and federal funding for community colleges has essentially remained flat while tuition has increased (Mitchell et al., 2019; Seltzer, 2019). More recently, state

appropriations for higher education, including public community colleges, were reduced by nearly 2% during the last fiscal year (Redd, 2021). While this is less than the worst-case fear of a 10% reduction (Doyle, 2020), public community colleges continue to be increasingly reliant on tuition and enrollment to fund operational expenses. As enrollment has declined nationally since its peak in 2012 after the Great Recession, a gap has grown in institutional budgets for which community college administrators continue to seek additional revenue sources. COVID-19 and declining birthrates appear to be accelerating this gap as enrollments, particularly in undergraduates, continue to drop (Nadworny, 2020; National Student Clearinghouse Research Center, 2020). Ken Anselment, a Wisconsin enrollment administrator, summed this reality succinctly by stating that “the bounce-back isn’t coming, or it’s certainly not going to be coming for a long time” (Marcus, 2021, para. 10). These financial challenges amidst overall enrollment declines have led to a renewed focus on enrollment management, whether through higher admittance or improved retention.

Enrollment Management

Enrollment management, in a higher education context, has been defined in several different ways. Broadly speaking, Wilkinson et al. (2007) defined enrollment management as “a comprehensive approach to integrating all of the University’s programs, practices, policies, and planning related to achieving the optimal recruitment, retention and graduation of students” (p. 8). More generally, Bontrager (2008) stated that “enrollment management is defined as a coordinated set of concepts and processes that enables fulfillment of institution mission and students’ educational goals” (p. 18). Others have focused more exclusively on enrollment. Ritze (2006), for example, focuses on the

“efforts to manage the size and nature of an institution’s enrollment in order to help it meet its goals” (p. 84). These definitions all focus on the institutional goals, processes, and procedures necessary to attract and retain college-going students and are born out of a desire for administrators to exert influence over their institution’s enrollment (Hossler, et al., 2015).

Depending on the institution, various departments or roles can fall under enrollment management. In some organizations, this includes all aspects of a student’s educational career, ranging from the initial point of contact through graduation. Organizational leadership models range from a single coordinator to a committee or even a full division. Departments may include specific areas like marketing, admissions, financial aid, and student advising. Broader areas like recruitment, student support services, curriculum development, and retention can also be included under the enrollment management umbrella (Hossler et al., 1990; Hossler et al., 2015; Ritze, 2006). Regardless of who or what is included, data has become a significant part of the enrollment management process. Enrollment management has evolved to include “an institution’s ability to integrate through data, to build predictive models for enrollment, and to create varied pathways to enrollment success” (Enrollment Management Association, 2017, p. 3). This focus on data often involves breaking down information silos from individual divisions to share information across the institution (Hossler & Kalsbeek, 2013). This often can lead to the utilization of predictive analytics that can develop actionable recommendations leading to student enrollment (Delcours & Carmona, 2019).

This focus on aggregating data to better predict student behaviors has been adopted

slowly within the higher education sphere. Enrollment management – sometimes used with the word ‘strategic’ at the beginning – was coined in the 1970s as a response to a decrease in enrollment at that time (Hossler et al., 2015). Competition amongst institutions was fierce as the number of traditional age college students decreased. Many institutions, including some community colleges, looked for ways to increase their enrollment, turning to aspects of enrollment management for assistance. However, for many public community colleges that were well-funded by the state, this seemed antithetical within an environment that accepted nearly everyone. Thus, the incentive for community colleges to enroll more students was low. As the economic realities of reduced state appropriations continue to squeeze community colleges (Doyle, 2020), there has been a renewed focus on enrollment management as college completion has attained prominence. No longer can community colleges engage in a laissez-faire approach to student enrollment and attendance that leads to uneven educational experiences and unfinished goals (Cohen et al., 2014). Instead, state funding is increasingly based on the number of students enrolled along with other factors like college completion. Thus, while community colleges are still considered public, open-enrollment institutions, elements of enrollment management are being embraced to combat alternative educational options and decreased funding.

Enrollment Funnel

As enrollment management began to take root in higher education during the late 1970s and 1980s, thought leaders worked to develop and streamline a clear process that could show how students moved from initial contact to attendance at an institution. This process is known as the enrollment funnel and views enrollment through an economic

lens. Most commonly, the funnel starts with prospective students (the largest group) and incorporates between six and ten steps to narrow the number of students down to those who enrolled (smallest group). As an example, the primary steps of the funnel are sometimes broken down into Prospects, Inquiries, Applicants, Admits, Acceptants, and Enrollees with much of the institutional focus being driven towards getting students to apply (Sandlin, 2018). Less attention is given in the literature on moving Applicants and Admits to Enrollees.

While this model has worked to define the enrollment process in four-year institutions, there are some notable differences for community colleges (Ma & Baum, 2016; Williams & Wendler, 2020). First, unlike baccalaureate schools who recruit people from across the country, community colleges mostly focus their recruitment on a specific geographic area in a state or region. Thus, while there are prospects, they are limited based on geographic factors. Second, most community colleges have open enrollment policies meaning that of the students that apply, nearly 100% are admitted. This differs from most baccalaureate schools who have selective admissions based on outside characteristics like grades, test scores, or service.

Much of the literature on the enrollment funnel focuses on turning prospects into applicants, an area that has minimal connection to community colleges. As community colleges developed over the 20th century, they borrowed and adapted systems from four-year institutions that were not designed with community colleges in mind. These enrollment processes were intended to keep people out, not keep people in (Guth, 2018). Less research is focused on moving prospective students that are admitted (nearly everyone in the case of most community colleges) to enrollment and attendance. One

metric that can be helpful is yield rate: the number of enrollees divided by the number of applicants or admittants (for 4-year schools). Because of selective admissions in baccalaureate schools, the yield rate and other admissions data is readily accessible for baccalaureate institutions through the Integrated Postsecondary Education Data System (IPEDS) or the State of College Admission Report (Clinedinst & Patel, 2018). IPEDS, however, does not collect information regarding admissions or applications from community colleges. Thus, there is no centralized, publicly available data source that tracks community college enrollment trends or information.

Despite this lack of data, there are several examples of community colleges who have provided admissions data demonstrating the challenges found within the admissions funnel. In a recent study, a sizable population of prospective students – over 40% – did not enroll after applying to a community college (EAB, 2018). As one administrator stated, “We’re losing students who have already applied to our colleges. We’re losing over 50 percent of our students in the matriculation process” (Smith, 2018, para. 30). Oakton Community College (2018) found that only 56% of students were able to register and even less actually enrolled and paid their tuition. Other schools, like Mt. Hood Community College (Hubbard, 2019) in Oregon and Arizona’s Mesa Community College (2013) struggled to convert even 40% of their applicants into enrollees. Considering community college economic realities, the fact that 56% of applicants do not make it to the first day of class (Smith, 2018) is problematic. This can be due to a myriad of factors that surround the enrollment experience including, but not limited to, a lack of connection with the college, financial insecurity, or personal obligations.

The enrollment experience has been noted to be overwhelming for some students

simply due to institutional processes. “Community college students are often confused and sometimes overwhelmed by the complexity of navigating their community college experience” (Scott-Clayton, 2011, p. 25). Rosenbaum et al. (2006) found that many students were overwhelmed by challenges associated with the completion of such tasks like the Federal Application for Student Financial Aid (FAFSA) or classroom enrollment. This has been exacerbated by the COVID-19 pandemic as FAFSA filings are down over 15% compared with previous years (Mitchell, 2020; Smith-Barrow, 2020). Without being able to pay for college or find appropriate classes that fit a student’s personal schedule, enrollment is not possible. For colleges, then, it is important to focus on the enrollment experience to reduce the challenges students have in attending a community college.

Enrollment Patterns

While the enrollment funnel can be a helpful model for institutions, it does not speak to the specific actions of students and how the institution responds. Enrollment patterns is a term found in several studies (Bahr, 2013; Dougherty & Kienzl, 2006; Wang, 2009) that refers to student behaviors and the influence of these behaviors on student outcomes. In some cases, this is found within the context of student transfers to baccalaureate institutions, but in other cases it refers to the matriculation process (Bahr, 2013). For all that colleges do to enroll students, there is little known about the how and why of student behaviors in this area. Leinbach and Jenkins (2008) note the importance of understanding the progression of students to develop approaches and interventions that improve student outcomes. Bahr (2013) summed this up by saying that “as long as student behavior remains a proverbial black box, institutional adjustments and interventions will be more a product of guesswork than of sound and empirically based

reasoning” (p. 144). This student behavior, though, is often characterized or researched within the scope of college choice – an area that has incurred extensive research but for which much is still unknown.

Community colleges are beginning to explore enrollment patterns as they seek to maximize their financial resources. While a centralized repository of enrollment information for community colleges may clarify some macro changes, the work on drawing in additional students has been inconsistent at the institutional level. Over time, researchers have focused on the student decision-making process to better understand how and why students choose a higher education institution. This research has led to several theories that seek to explain the college-decision making process and form the basis of this study.

Theoretical Framework

Enrollment patterns can help institutions evaluate aspects of their enrollment process; but the success or failure of an institution is ultimately based on the decisions that students make. Without students, the entire education system fails to exist. Thus, the student perspective is of great significance to college administration. This has led to a significant amount of research regarding why students attend college and the process that students undertake as they make decisions to attend or not attend college. An understanding of the theoretical frameworks that undergird these decisions is helpful in developing research questions that will assist in understanding the challenges students face in enrolling in community colleges.

College Choice Theory

Millions of students each year make life decisions around college, ranging from if

they should attend college to where they attend college. This decision-making process is often termed college choice – the series of decisions that lead from a person aspiring to attend college to the selection of and enrollment in an institution of higher learning (Bergerson, 2009). While the term is rather simple to define, its study has invoked a rich legacy of research that continues to this day. Individual studies (i.e., Barreno & Traut, 2012; Rosenbaum et al., 2006) and historical retrospectives (i.e., Bergerson, 2009; Paulsen, 1990) provide a helpful understanding of past research. Generalized theoretical models (i.e., Chapman, 1981; Hossler & Gallagher, 1987; Litten, 1982; Perna, 2006; Somers et al., 2006) that were common during the first 20 years of research have given way to more specific research studies that seek to understand college students and their distinct backgrounds in specific contexts or roles (i.e., Acevedo-Gil, 2017; Taylor, 2015). Many studies, though, often focus on traditional four-year students with comparatively little being written about two-year institutions. To highlight these differences, it is important to take a brief look at the theory that has shaped the research around college choice. For a more complete overview than what is found here, see Bergerson (2009).

Hossler and Gallagher (1987) espoused the dominant theory that has been found in college choice literature for over 30 years. Their research posited that there were three primary and sequential stages within the college choice process: predisposition, search, and choice. Predisposition, the first stage, focuses on a student in middle or early high school developing an interest in attending college. This is followed by conducting a search for a college (stage two) in late high school. The third stage, choice, involves the student applying, being admitted, and ultimately selecting an institution. While this theory is broadly helpful to identify processes for traditional age students, it does not take

into effect more nuanced factors. As such, various studies have shown that the model is not a good fit when evaluating or incorporating race (Acevedo-Gil, 2017; Cox, 2016; Freeman, 2005), environment (Gildersleeve, 2010), cultural characteristics like family (Freeman, 2005), non-linear students (Bergerson, 2009; Cox, 2016), or even community college students (Iloh, 2018; Perna, 2006). Thus, there are significant limits regarding the generalization of this model to unique groups.

In response to Hossler and Gallagher's (1987) theory that focused on process, some researchers focused more on the cultural and social aspects of how students make decisions, often rooted in social class. Grounded in Tinto's (1975) work that focused on the student need for social integration (i.e., feelings of connectedness), Bourdieu (1986) utilized the term *habitus* to "describe a personalized, unconscious lens through which an individual...views the world" (Hlinka, 2017, p. 146). A person's *habitus* provides insights into the "rules of the game" that help a person navigate a field and feel connected or socially integrated (Hlinka, 2017). Perna (2006) also used this term, *habitus*, as part of her broader model of college decision-making, evaluating the individual contextual factors affecting college choice. Her conceptual model, rooted in human capital theory, incorporates four layers that are ordered from specific to broad: a) individual student *habitus* (demographic characteristics, cultural and social capital); b) school and community contexts (the resources available, often counselors or teachers, responsible for structural support and barriers); c) higher education context (location, marketing, and recruitment strategies of the institutions); and d) broader social, economic and policy contexts (state, national, and international elements that affect local decision-making). These layers help to provide a clearer picture regarding the elements that can affect

college decision-making.

Perna's (2006) model, while providing factors that can affect an individual's habitus, is not without critics for its lack of flexibility to attend to the nuances found within college decision-making. Gildersleeve (2010) points out that while Perna's model brings in discrete areas of research, it still is founded on basic assumptions regarding the sequence in which a student chooses a college. As such, Perna's model does not consider the many underserved, disadvantaged, or underrepresented students (Cox, 2016). Similarly, Acevedo-Gil (2017) noted that while Perna's model accounts for "various societal, institutional, and individual variables, it does not detail the processes behind the college choices" (p. 831). Nonetheless, it is a helpful model as it integrates both economic and sociological perspectives from both the individual and institutional contexts.

More recently, the college choice literature has increasingly focused on access and equity. Bergerson (2009) argues that there is a difference between college access and college choice. She posits that it is assumed that those that have a choice already have access. However, for many students, this cannot be assumed as there may only be one viable choice for a student. In this vein, some researchers have attempted to use Perna's (2006) model as the foundation for other models that are focused on underserved populations. Acevedo-Gil (2017) focuses the unit of analysis on the individual level (akin to Perna's incorporation of Bourdieu's [1986] *habitus*) with an emphasis on Latinx students. Focusing on the intersectional experiences of students, the framework "aims for students to develop a reflective college consciousness, depicted through self-advocacy and supporting peers with the college choice process, despite continually encountering

obstacles” (Acevedo-Gil, 2017, p. 835).

Challenges within Theoretical Models of College Choice

There are several challenges within the dominant theoretical models and frameworks around college choice. For one, theoretical models do not adequately address how students deal with the obstacles they encounter along the decision-making process. While most college choice theory, undergirded by rational choice theory, assumes linearity in the college choice process, the process is often non-linear as students move from space to space through a framework. Said another way, research has attempted to repackage a complicated, winding process full of loops and detours into an uncomplicated model of decision-making, leading to perpetual design challenges within a model (Cox, 2016). Further, at every stage of the process, “the success of any given student is confounded by a disparate array of economic, cultural, and social resources” (Engberg & Wolniak, 2009, p. 2257). For example, a student may apply to one college, but also continue to gather information about others to consider alternative options. Other students may be unaware of financial considerations that force them to reconsider their college options. Thus, the decision-making process is often not sequential or simple in nature, but an ongoing series of decisions that may go both backwards and forwards with occasional interruptions (Bergerson, 2009; Cox, 2016).

Relatedly, many theories are structured on the traditional college student who graduates from high school and immediately enters college. While these traditional undergraduate students are a significant market segment, there are now many students that do not fall into this category. Adult, military, immigrant, and second-career students are just some examples of people who did not take a straight line to college completion.

Studies have shown that these students, often in conjunction with their race or socioeconomic status, disproportionately attend community colleges (Lopez et al., 2020; Ma & Baum, 2016), yet the theoretical research does not account for this large segment of students.

Contemporary Environmental Models

To account for non-linear aspects within the postsecondary choice models, Tierney and Venegas (2009) proposed a cultural-ecological model. This model involves an understanding of the environments in which students live and how students make decisions – both college related and non-college related. These environments, unique to individual students, provide a window into how and why decisions are made and the context in which they are made. M. Christopher Brown II, in his foreword to Freeman's (2005) book on African Americans and college choice, noted this fact:

The unique contexts and factors surrounding any population (for example, immigrants) encountering American educational structures warrants serious and unconfounded investigation. The challenge is to move from predetermined and often dated research toward a contemporary corpus of scholarship that addresses both the phenomenological and pragmatic considerations for schools and their students. (p. xiv)

Freeman (2005), later in the book, elaborated on this point with a creative analogy by saying that “the interpretation of any findings absent an understanding of a group’s culture is analogous to attaching wings to a turtle and then being perplexed as to why the turtle cannot fly” (p. 111).

In this vein and more recently, Iloh (2018) provided an additional framework that

attempts to account for different students in different environments, including community college contexts. Her framework assists in understanding the decision-making trajectory of a potential student utilizing the components of information, time, and opportunity. She notes that these components are “contextually interwoven, which warrants context-specific data collection...[requiring] some level of proximity to informants in the data collection process to ascertain the contextual narratives beyond what survey data might tell us” (p. 239). Thus, this framework can broadly be applied to any enrollment setting, including two-year institutions, by considering the unique and individualized decisions that lead to a college selection.

As an example of how Iloh’s (2018) theory works, parents may encourage a traditional age student to get a degree while still living within the household (time). Older potential students may have significant life experiences but are considering college to brush up on a few skills paid by their employer (opportunity). Still other students may be unclear on their life direction but saw an advertisement that marketed a discounted education for which they inquired (information). These are examples of scenarios as to why potential students may choose a college and enroll. This framework is also broad and flexible enough to explain the heterogeneity among all types of students, environments, and experiences that shape the college decision-making process. This “interconnectedness between individual characteristics and institutional contexts” is key to understanding the importance of all students and their path into college (Acevedo-Gil, 2017, p. 844).

These theoretical models inform an understanding of college student decision-making and provide guidance in developing the methodology of this present research.

The variables used should not only be connected to the contextual environment being studied but should also be grounded in theoretical understandings of college choice.

While several theoretical models have elements supporting variable inclusion, the Iloh (2018) and Perna (2006) models may be the most appropriate for this study. The broad nature of Iloh's (2018) three components – time, opportunity, and information – can be applied to many potential variables. For example, a military veteran may be more motivated to enroll in classes due to the *time* limits and *opportunity* that comes from the GI bill. Inclusion of this variable is reasonable. Perna's theoretical model, while more specific and explicit, informs several variables that are part of this research. Primary is a robust discussion regarding socioeconomic status (SES) and its importance within the college-decision making sphere. Perna's (2006) model incorporates family resources as a factor in college choice and its inclusion in the present research is both important and necessary.

Theoretical Connections to Leadership

The college choice and student decision-making literature has evolved over the past 30 years, paralleling a similar growth with several schools of leadership theory. One of the more common leadership theories is transactional leadership, often characterized as clear, direct, and unidirectional (Tavanti, 2008; see also Bass, 1985; Burns, 1978).

Compared with more contemporary leadership theories, it is often considered limited and rigid in its implementation. This theory parallels Hossler and Gallagher's (1987) original theory of college choice that was narrowly focused and linear in its view of how students progressed along the three steps of college choice. Hossler and Gallagher give little room for non-traditional students or those whose experience is not a simple and direct path to

college. While both theories have application to real life, their generalizability beyond their narrow focus is limited to basic and traditional views of leadership and college choice.

Beyond straight theoretical parallels, various aspects of transactional leadership, namely leader/follower, mirror the relationship between college and student. Transactional leadership posits that leaders largely motivate followers based on systems of reward and punishment with less care for a follower's well-being (Tavanti, 2008). Exchanges are made between the leader and follower that result in mutual feelings of trust. This cycle of trust is developed as leaders provide task direction and followers complete the task, resulting in a functional system where everyone knows their role. When the cycle is broken, corrective criticism or negative feedback, usually through management by exception, is provided to the follower to re-establish trust (Basham, 2010). Similarly, the relationship between colleges and students is made up of mutually benefitting exchanges where colleges provide the opportunity for education and students complete educational tasks to earn a degree (the reward). This cyclical relationship benefits both the college (continued existence) and the student (earned degree). Trust can be broken when students do not complete their tasks potentially resulting in probation/dismissal or colleges close leaving students without a degree.

As leadership studies have grown as a discipline, new streams of research have emerged to provide additional perspective on leadership beyond transactional. Contextual or contingency leadership is one of those streams. Initially espoused by Fiedler (1978), contextual leadership considers whether situational factors increase or decrease the impact of leadership practices in specific contexts (Oc, 2018; see also Day & Antonakis,

2012; Johns, 2006). As several articles imply, leadership does not operate in a vacuum but in an organizational and environmental context (House & Aditya, 1997; Porter & McLaughlin, 2006). Likewise, Perna (2006) and others expanded college choice models to include multiple layers and call for more contextual analysis of student decision-making. More recent perspectives led by Iloh (2018) have continued to evaluate college choice from this perspective with an understanding that decision-making must take into consideration individual contexts.

The parallels between college choice theories and various leadership theories are significant in this study. Both areas have broadened their scope to explore thinking about students and leaders not in a controlled setting, but within the arenas in which they operate. This has led to an increase in the way that theory informs practice and vice versa, particularly when considering the nearly limitless contexts that exist for both students and leaders. Because of this overlap and synergy between the two fields, higher education leaders would be wise to consider not only contextual college choice studies that mirror their own institution, but also contextual leadership studies as well. These studies may provide insight into their own leadership style, ultimately enhancing their own decision-making to improve outcomes for students seeking a college degree.

Student Characteristics Related to College Choice

Theoretical research around college choice has moved away from sweeping generalities (i.e., Hossler & Gallagher, 1987) to more focused and nuanced perspectives that work towards improving access and providing balanced opportunities. As such, previous research within the college choice literature has evaluated several variables that are known or believed to be significant in understanding student decision-making. To

organize these disparate variables, this study seeks to group these under four broad umbrellas, grounded in theory, that have been shown to have significance in the college decision-making sphere. They are presented to support their necessary inclusion in the present study.

Demographics

Much of the college choice literature focuses on basic demographic characteristics that have been included in previous college-decision making research. Perna (2006) includes them as the primary part of her *habitus* (or layer 1). Because of the considerable amount of research available and their importance, including them in this study is both important and necessary.

Race. Race is a demographic characteristic for which much research has been done around college choice. Several studies have focused on the inadequacy of Hossler and Gallagher's (1987) predisposition stage as it relates to minority populations, specifically African Americans (Freeman, 2005; Hamrick & Stage, 2004; Muhammad, 2008; Shankle, 2009), but more emerging literature is including discussion on the ever-growing Latinx population that doubled in college enrollment between 2000 and 2016 (Acevedo-Gil, 2017; de Brey et al., 2019; Pérez & Ceja, 2015). Other research focuses on the underrepresentation of African American males in postsecondary education (Baber et al., 2015; Brown & Dancy, 2010). Several studies have focused on race in community colleges specifically. Minority students disproportionately enroll at community colleges, as Lowry (2017) noted for African Americans and Malcom-Piqueux et al. (2012) did for Latinx populations. There are more Latinx students in community colleges than any other race (Kena et al., 2016) and they are more likely to attend community colleges when

compared with all other students (Kurlaender, 2006). One of the reasons for this is due to location in that community colleges are often more easily accessible than four-year colleges. While this can have benefits in that community colleges often look closer to the racial makeup of their communities as compared to four-year institutions, the overall balance of minorities in postsecondary education compared to society at large is still lacking.

Iloh's (2018) theoretical model that evaluates decision-making through information, time, and opportunity is helpful when considering other research about race. Perna (2006) notes that differences in information resources partially explain disparities in college enrollment among minority students. Several studies evaluated the information provided to minority students by high school counselors that reinforced stereotypes about college-going (Hamrick & Stage, 2004; Lowry, 2017; Muhammad, 2008). Other studies reinforced the information and opportunity provided by family within African American (Freeman, 2005; Shankle, 2009) and Latinx (Olivarez, 2020) populations that contributed significantly to the decision-making of students. Information coming from peers can lead to a phenomenon called chain enrollment where Latinx students often apply and attend postsecondary institutions attended by other students in their social network (Person & Rosenbaum, 2006). Arnold et al. (2009) helped frame the time construct by evaluating the time between admission and enrollment over the summer months. Focused on minority students, the study found that nearly 20% of students dropped out of the pipeline between their intention to enroll and actual enrollment (90% to 70%). As noted in the study, "these findings suggest students continue to decide about where and whether to enter higher education after existing theory and policy presume that the access process is

complete” (Arnold et al., 2009, p. 25). Additionally, Cox (2016) summarized other factors where race and ethnicity are related to a student’s college-going chances. Specifically, payment, college-going curriculum in high school, and lack of understanding of the nuances of college entry requirements were important. Finally, Engberg and Wolniak (2009) found connections between several variables related to college decision-making and the effect that race played in accounting for the variance in the matriculation decision. Clearly, race is important in understanding the college decision-making process.

Gender. Research regarding gender and college decision-making is often mixed with other factors like race or socioeconomic status and tied to college attendance. Examples of this have shown that African American males fall behind their female counterparts in collegiate attendance (Brown & Dancy, 2010) and Latino males are less likely to enroll than females (Nuñez & Kim, 2012). Broader examples have shown that “in 2016, a greater percentage of undergraduates were female than male across all racial/ethnic groups. The gap between female and male enrollment was widest for Black students (62 vs. 38 percent) and narrowest for Asian students (53 vs. 47 percent)” (de Brey et al., 2019, p. vi.). With open admissions community colleges, gender balance is only as strong as the people applying to the college. Thus, using this variable to identify potential trends in enrollment can be helpful.

Age. According to the American Association of Community Colleges (2020), the average age of a community college student is 28. Community colleges serve about 7% more students between the ages of 25 and 59 compared to all other institutions (Beer, 2016). Over 60% of students older than 24 begin their educational experience in a

community college (Adelman, 2005). Thus, research that groups varying ages together does considerable disservice in understanding differences due to age (Adelman, 2005). Further, early college decision-making models (i.e., Chapman, 1981; Hossler & Gallagher, 1987) focused almost exclusively on traditional college-age students ranging in age from 18-24. They did not account for older, adult students who may be coming to college with unique and varied life experiences. Often, these students were classified as non-traditional simply because of their age. This was a flaw identified by Perna (2006) and a particular error noted by Iloh (2018). Iloh's context of time is important in considering this variable and its inclusion in the present study is well-supported in the literature.

Location. For some potential college-going students, personal situations may dictate only a few options of college. How far or close a campus or college is to one's residence may influence the decisions of a potential student. Military students, for example, often select the community college that is closest to them (Jones, 2017). A recent set of research has found geography and location to be a significant factor within the college decision-making process (Hillman, 2016; Turley, 2009). Aligning closely with Iloh's (2018) theory, Hillman (2016) states that "the geographic location of colleges is one of the most basic and obvious dimensions of opportunity" (p. 988). Discussing another of Iloh's (2018) contexts in relation to geography, Hillman (2016) describes college choice as "less a function of 'college knowledge' or 'better information' about one's options and more a function of geography" (p. 989). In laying out this framework, Hillman prioritizes place over purpose to develop a more nuanced understanding of the decision-making process of college-going students. Incorporating this variable into the

present study will help to shed light on how distance may play a role in student enrollment.

Academic Experience

Perna (2006) includes a portion of her model that she entitles “demand for education”, including both academic preparation and academic achievement (p. 117). The academic knowledge a person brings to college has been shown to have sizable influence on a range of outcomes (Mayhew et al., 2016), but especially on college enrollment (Cabrera & La Nasa, 2000; Perna, 2004). Perna (2004) operationalized this by showing that enrollment in college preparatory tracks led to positive outcomes in college enrollment. Students who are academically prepared in K-12 are more likely to enroll and attend college (Adelman, 2005; Center for Community College Student Engagement, 2016). In the past, grade point average (Ellwood & Kane, 2000) and standardized test scores (Perna, 2000) have also been used by researchers as variables in academic experience. Much of the literature around academics and college choice focuses on both historical (i.e., what the student brings into the collegiate experience) and aspirational (i.e., what the student is seeking from college enrollment; goals) contexts. Thus, including variables that mirror these contexts can provide further insight into the college decision-making process.

Admit Type. All students entering the college environment bring some level of academic experience with them. Some are fresh out of high school and begin as a traditional student. Others have higher education experience but enter a new institution searching for a better fit (i.e., transfer). Non-traditional students may or may not have earned a credential some time ago but are either pursuing a degree at a later point in their

life or desire a second degree in a different career field. These unique and varied situations demonstrate the wide variety of experiences and motivations present when students consider attendance at a college. The information gathered by each student, per Iloh (2018), would include nuanced contexts regarding the college decision-making process. Understanding enrollment based on these different lenses is important.

Specific to community colleges, each of the situations described above is relevant within this setting. Of note are those students who attended other community colleges or four-year institutions and transfer to the community college. In 2005, this accounted for about 7% of community college students (Adelman, 2005). More broadly, roughly 6% of all undergraduates are transfer students each year (Nietzel, 2021). Generally, those students who have transferred have poor grade point average (GPA) and have higher rates of course withdrawal and repeats than those who start in community colleges (Adelman, 2005). Including a variable that provides context for the academic history of a student could provide valuable insight to this study.

Academic Aspiration/Goals. Some variables take a historical approach to academic achievement by looking back at what the student did previously. Others, like academic aspiration, take a forward-looking approach that provides insight into the goals and/or expectations a student has when they apply to a college, particularly as seen through their course of study. As Adelman (2005) found, a student's expectations can be important in achieving their academic goals, but a student's expectations are also important in the college decision-making process (Nuñez & Kim, 2012; Scott et al., 2016). Those that have some level of academic goals are more likely to have success in their academic studies and move towards graduating with a credential as compared to

those who start without a plan (Bailey et al., 2007; Friedman & Mandel, 2009). Goals, though, can change based on academic, financial, or life concerns. As a practical example of the effect goals can have on outcomes, students in Science, Technology, Engineering and Mathematics (STEM) fields that had goals to obtain a baccalaureate degree, but began at a community college, were less likely to transfer successfully (Wang, 2009, 2015). However, the overall picture of transfer from community colleges to four-year institutions shows that these students will be more successful than native students in obtaining a baccalaureate degree (Lederman, 2016). Thus, including an academic aspirational variable can assist in understanding college decision-making.

Socioeconomic Status

One of the biggest questions that potential students often ask is how they are going to pay for a collegiate education. This question is tied closely to the socioeconomic status (SES) of the student and his/her family. SES is regularly cited as a primary determinant in whether a student enrolls in college (Hoxby & Avery, 2012; Skinner, 2019; Tierney & Venegas, 2009) and is a significant factor in the development of motivation in students (Center on Education Policy, 2012). It can be operationalized through several factors like student's adjusted gross income, student earnings, parental earnings, and parental education. Generally, it is believed that the lower the SES of a student, the less likely the student is to enroll in college and the more likely the student will choose a college lower than the student's actual achievement level (Hoxby & Avery, 2012).

Perna (2006) focuses much of her research and theory on the socioeconomic and broader sociological aspects found in college choice models. Her first layer, the *habitus*, includes an individual's socioeconomic status as part of the decision-making process.

Other literature emphasizes the unique and nuanced experiences of people coming from lower socioeconomic status (Grodsky & Jackson, 2009) and how this status predisposes them to enroll at a particular type of college (Cabrera & La Nasa, 2000). Financial aid data, an indicator of socioeconomic status, is often used to study college choice and is also a prominent predictor of matriculation decisions (Beltran, 2017). More pertinent to this study is research that shows that students from lower socioeconomic backgrounds are disproportionately likely to start at community colleges (Fain, 2019). To this end, Adelman (2005) found that over the 30-year period of the three, national grade-cohort longitudinal studies, the community college share of entering traditional age students from the lowest SES quintile increased from 44 to 55 percent.

SES has been and continues to be used in connection with research around college equity and access. This topic has taken on a much more significant role in the present national environment and is at the forefront of many institutional leader's minds. In addition to considerations for present leaders, SES also plays an important role in the development of future leaders – the students that colleges are called to serve (Li et al., 2011; Soria et al., 2014). While it should be noted that the cost of college continues to “price out” some groups of students, thereby affecting college decision-making (Bragg & Durham, 2012), a detailed focus on equity and access is beyond the scope of this present study. Nonetheless, SES is an important factor in understanding the college decision-making process. Adelman (2005) summed the importance of this variable in relation to community colleges succinctly when he stated:

Neither gender nor race/ethnicity nor second language background nor first generation status ends up playing a statistically significant role in explaining who

starts out at a community college, but SES ... does play such a role: the higher the SES quintile, the less likely the student will start in a community college. (p. xvii)

Parent Education Level/First-Generation College Students. Under the broad umbrella of items that relate to socioeconomic status is the parental education level of the prospective student. As Perna (2006) notes in her theoretical model, the connection between parental education and a variety of college-choice outcomes is positive and significant. This is illustrated in her first layer of college choice, the *habitus*, which includes the value of college attainment, namely parental education, under cultural capital. Relatedly, the parent's education level is tied into the information context espoused by Iloh (2018). Students who had a parent attend college are likely to gather better or more information about the college-going process than those who do not have this resource to draw from.

This is most evident in first-generation college students, a subset of this variable for whom their parents did not attend college. These students often come without an understanding of higher education terminology nor the process by which they can even attend college. Because of this, first-generation college students are often at a unique disadvantage due to the lack of information they receive from their parents (Engberg & Wolniak, 2009). Initial models of college choice, like Hossler and Gallagher (1987), incorporate parental encouragement and academic readiness in the first stage of their model, predisposition. Continued research has shown the influence of parents in both encouraging and discouraging students from considering college attendance, particularly early in their high school years (Bers & Galowich, 2002). First-generation students, particularly Hispanic students, must seek outside resources, mostly from their high school

and peers, to gather the requisite information necessary to apply and enroll in college (Jarsky et al., 2009; Pérez & Ceja, 2015; also Iloh, 2018).

Community colleges enroll a significant, and often disproportionate, amount of first-generation college students due to their open enrollment policies and lower tuition costs. 29% of community college students are first-generation students (American Association of Community Colleges, 2020) and this percentage is a greater share of the total as compared to all postsecondary institutions (Beer, 2016). Low-income, first-generation students are more likely to attend a community college than other student types (Berkner & Chavez, 1997; Choy et al., 2000). In relation to race, the percentage of black and Hispanic first-generation students attending community colleges was higher as a percentage of their whole when compared to four-year, public institutions. In 2014, for example, 31% of all first-year students attended a community college, but 36% of black and 43% of Hispanic first-year students attended a community college (Ma & Baum, 2016). These examples are just a sampling of the data that illustrates the importance of considering and including a variable about parent's education level within this study.

Expected Family Contribution/Adjusted Gross Income. Financial aid data, like adjusted gross income, has been utilized throughout the research literature to represent various aspects of socioeconomic status when discussing the economics of paying for college. While it is often included in a composite variable with other parental or familial variables, there are times where including individual aspects may be helpful (Perna, 2006). The expected family contribution is used in determining Pell Grant eligibility by calculating the amount a family can provide towards college costs (Davidson, 2015). This variable is personalized to individual students thereby providing more nuanced and richer

consideration of the data. Other studies have used generalized, impersonal variables, like median household income based on zip code, as a proxy for this variable (Beltran, 2017). This study, however, seeks to incorporate personalized financial aid data to understand factors affecting the college decision-making process.

Familial Roles

Generalized theories regarding college decision-making focus on the student as the primary decider in regards to college choice (Freeman, 2005). However, this fails to account for the fact that often families decide, or aspire, for a student to attend a collegiate institution. These contextual and external forces outside of an individual person often play a significant role in the college decision-making process.

Military Service. Over the past 10-15 years, there has been an increase in attention from higher education institutions towards returning veterans. More schools are working to provide a higher education experience that is tailored to service member's unique and individual needs. One area has been the development of "military-friendly" colleges that have implemented specific standards to reach veteran students (Heineman, 2016). These students are often considered non-traditional, with many being married, non-white males over the age of 24 (Heineman, 2016). Additionally, many lack information regarding the enrollment process and the options they have in higher education (Jones, 2017; see Iloh, 2018). Jones (2017) found that most veterans have little to any experience with higher education and simply choose the local community college because of its proximity to their location. Considering there is still much to learn about veterans and their college decision-making, it is important to include this variable in the present study.

Dependency Status. Much research has been done regarding the influence of

parents on the college decision-making process. Various studies have shown that the parental relationship promotes positive outcomes generally (Perna, 2000) and specifically within African American (Freeman, 2005) and Hispanic/Chicano communities (Garcia & Mireles-Rios, 2020). Community colleges, particularly, may care more about the dependency status since the parents are themselves potential students (Bers & Galowich, 2002). Very few studies appear to have incorporated this variable, but at least one article written by Paulsen & St. John (2002) did incorporate this variable in their efforts to understand college decision-making among various groups. Thus, including this may be of help in the present study.

Marital Status (parent and personal). There is minimal information in the literature regarding how a person's marital status or a parent's marital status may affect college choice and enrollment. One such study that did look at this topic was Lillard and Gerner (1999) who considered how family disruption might affect enrollment in Ivy League colleges. While it was clear that students who come from one-parent households are less likely to enroll, they found it difficult to disentangle this factor from related variables that are likely to be part of the student's background, namely family income and/or family size. Including this variable may be helpful in teasing out some of the considerations around college choice.

Children. It is well documented that having children will have significant effects on college enrollment. Community colleges, in particular, have a sizable population of students that have children of their own. In 2016, over a quarter of community college students had their own dependent children and 15% had dependents 6 years old or younger (Beer, 2016). While these numbers declined between 2008 and 2016, they still

represent a significant number of college students. Relatedly, 15% of community college students were single parents in 2020 (American Association of Community Colleges, 2020). Like first-generation college students, this is a significant population that is only recently receiving attention in the research. Iloh's (2018) context of time seems to be most appropriate considering the significant demands that children exert on a parent's time.

Certainly, there are more variables that could be included that may have a greater effect on college decision-making outcomes. Considering Iloh's (2018) model again, the *information* that a potential student is provided and from whom may have a significant effect. The *time* it takes to complete the enrollment process may vary amongst institutions. Still others may have personal challenges that limit the *opportunity* they may have originally believed was available to them. These are just a few of numerous examples that illustrate the nuanced aspect of the college choice process. The limited knowledge that exists on this subject may simply be a function of the fact that this subject is so personal. Nonetheless, using data that exists in a single setting may provide a bit more understanding for some of the challenges related to enrollment in their individual environment.

Non-Enrollment

While there is significant discussion regarding how students enroll, there is less research regarding students who choose not to enroll. There are two broad categories that comprise these students: those who make the effort to apply to a college and those for whom post-high school coursework is not in their sphere of options. For the latter, these students are often unknown. Most studies in the college decision-making area use

regression to predict degree aspirations based on a variety of factors, but these studies assume that all college students want a degree, an assumption that often is not accurate (Bozick & DeLuca, 2011). Bozick and DeLuca, in their study of non-enrollees, found a heterogeneity of reasons why students did not attend college. Various factors like the lack of educational mentorship, financial constraints, and familial challenges were found to have a profound influence on post-high school options. Other reasons included the pursuit of a career that does not need college or joining the military. Lindholm (2006) found that the perceptions of career opportunities and work drove much of the decision-making. Indeed, student context and environment are significant (Bozick & DeLuca, 2011). Vance (2016), in his best-selling book, *Hillbilly Elegy*, observed many of these factors as well in both his own life and in the lives of his fellow high school classmates.

More relevant, but often under researched, are those students who have postsecondary career options and may even apply to a college, but are stymied from enrolling due to a variety of factors, often related to economic or socioeconomic situations. Colleges may know these people who do not enroll, but due to lack of resources, time, or need, they forgo learning about why these students do not enroll. The why question varies from institution to institution and even more from student to student but is important to having a better understanding of how to potentially meet the needs of these students (Bozick & DeLuca, 2011).

Several studies provide clues into these reasons. Many cite cost as a leading determinant in students' college choice (Enrollment Management Association, 2017). Failure to complete the FAFSA form accurately or to understand its importance in helping to pay for college may disrupt the enrollment process. Some colleges, like Boise

State University, found that nearly half of their admitted students did not enroll, citing work conflicts, lack of funds, family responsibilities, and need for more evening and weekend classes as the top reasons for their lack of enrollment (Belcheir, 2001). Cox (2016) engaged in a qualitative study that noted non-academic challenges like housing, books, and transportation – nothing to do with actual college information – that forced several students to reconsider their career aspirations. For example, students may need to meet with an academic counselor to choose classes but miss the meeting due to unreliable means of transportation or inconsistent Internet access and drop out of the enrollment process. Bloom (2007) found that many students are engaging in day-to-day survival instead of short- or long-term goal setting. This lack of future-oriented planning decreases the odds of enrolling due to “immediate life circumstances” (Cox, 2016, p. 12), causing students to balance expected benefits with expected costs (Acevedo-Gil, 2017).

The contexts for non-enrollment vary significantly, but research clearly shows how institutional decisions can overwhelm students and alter their plans. Acevedo-Gil (2017) noted several gaps with how students negotiate institutional and individual barriers when choosing a college, calling for more nuanced research to understand the paths of student decision-making. Case studies provide evidence where colleges failed to process a FAFSA (Cox, 2016), disburse financial aid (MacCallum, 2008), or engage in simple customer service (EAB, 2017) causing students to stop out within the enrollment process. These challenges illustrate the need for additional research in understanding the micro aspects found within the college choice sphere. Perhaps Cox (2016) summed it best by acknowledging that her findings

offer persuasive evidence that students’ college-going plans and decisions are

integrally linked to individual colleges' admissions and registration operations.

Indeed, the effects of colleges' matriculation policies and procedures on students' college going decisions form an area of research worth exploring in more detail.

(p. 23)

Summary

When observing the enrollment management and college choice literature, there is much information to consider. While theoretical frameworks have provided a window into the decision-making process, their fogginess due to incomplete, or even worse, inaccurate models leaves much to be desired. Much of this is due to the complicated and nuanced path that each student takes as they seek out education opportunities. However, incorporating micro-level information can assist in understanding macro-level trends. The information, time, and opportunity (Iloh, 2018) contexts are unique to each person. By utilizing demographic, academic, socioeconomic, and life experience information, this study will seek to provide clarity to a tiny piece of this foggy window.

Additionally, the burgeoning growth of leadership studies parallels much of the college choice research. Integrating leadership viewpoints within the larger context of enrollment management and college choice can provide a rich framework for motivating data analysis within the present study. More important, though, is how this combined contextual framework can assist in interpreting findings that improve leadership, enhance higher education organizations, and increase student success in navigating the winding road to college enrollment. This study seeks to include leadership perspectives in the understanding of the college decision-making experience.

Chapter Three: Methods

This research study is examining the relationship between enrollment management and college decision-making in a community college setting. Specifically, the time between a potential student applying and attending college is a blind spot within the research literature. This study aims to assist institutions in making better decisions in their onboarding and/or matriculation processes by answering the following research question:

What student-level factors are associated with enrollment at an open-enrolled community college post application?

Additionally, four secondary questions are also being considered:

- a) *To what extent are demographic variables associated with enrollment post application?*
- b) *To what extent are academic variables associated with enrollment post application?*
- c) *To what extent are socioeconomic variables associated with enrollment post application?*
- d) *To what extent are familial variables associated with enrollment post application?*

Data Source

The sample data set was created from the admissions applications of one mid-size community college located in western Virginia. This institution is one of 23 member institutions within the Virginia Community College System (VCCS). The college serves a three-county area that contains a mix of medium-sized towns and rural farming

communities. The race of the community is heavily skewed toward individuals identifying as White. The college has one primary physical location, but also oversees a significant dual enrollment program with the high schools and maintains a robust online education presence. The most popular degree program is the transfer/general studies degree that allows students to complete their general education requirements prior to transferring to a four-year institution. Other popular programs include veterinary technology, nursing, and biology. The student population (headcount) in 2019 was 3,834 of which 68% were part-time students and 59% were female. The data collection process, along with sample size and basic descriptive statistics is included in this research.

Enrollment application process

For potential students who wish to enroll in community college, the first step towards enrollment is the completion of an application that includes basic personal information. This application process is centralized within the VCCS. Prior to 2018, the application was considered outdated and problematic since answering highly specific questions incorrectly could jeopardize enrollment. Because of these concerns and a desire to make the application process easier, the VCCS sought to update the application used by the member institutions. This uniform application, with input from all VCCS institutions, was reimagined and streamlined over a multi-year period, culminating in a relaunch during the Spring semester of 2018. To utilize a consistent data set across multiple time periods, the data set used in this study includes students who applied to one community college between the Summer of 2018 and Spring of 2020, a total of six enrollment periods.

Data Set and Variables

The researcher requested the data set from the community college, recognizing that the desired data was secondary in nature. No contact with any student or potential student was needed nor given by the community college. Even with this understanding, IRB approval from James Madison University was sought, but ultimately not needed for this research study. Once cleared, the researcher received the data set. The sample set included the application data for all students who applied to a community college in western Virginia seeking to take a credit-bearing class. Additionally, the researcher requested and received financial aid data for applicants during this two-year period. Table 1 describes each of the requested variables and the various possible responses from the applicants.

Table 1

Requested Variables from Community College

Application Variables	Description and/or Response Choices
Race	Students could provide their primary race and indicate if they were multiple races. Race choices included: White, Black, Hispanic, Asian, American Indian, Hawaiian, Unspecified
Gender	Male, Female, Undeclared
Birthdate	Date applicant was born
Zip Code	Zip code of primary residence
Admit Type	Students could indicate whether they were a new student, a transfer from either outside or within the VCCS, or a readmit (student who was not enrolled for three consecutive semesters)

Academic Plan/ Aspiration	A code indicating a student's major within a desired degree program. There were over 90 different options for the student.
Application Term	The semester a student desired to attend: 2018 Summer, 2018 Fall, 2019 Spring, 2019 Summer, 2019 Fall, 2020 Spring
Application Status	Indicates if a student enrolled or did not enroll for the semester
High School Graduation Year	Year student graduated or anticipated graduating from high school
Military Status	Indicates a military connection. If selected, options included Veteran, Active, Retired, Spouse, or Dependent
Father's Education Level	Indicates highest education level of father. Ranged from Less than high school to Received post-bachelor's degree
Mother's Education Level	Indicates highest education level of mother. Ranged from Less than high school to Received post-bachelor's degree
<hr/>	
Financial Aid Variables	
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Expected Family Contribution	This number, determined by a FAFSA processor, indicates how much a family "should" be able to contribute toward college in the upcoming year.
Dependency Status	Indicates if a student is independent or dependent for the purposes of their tax status
Adjusted Gross Income of Student	Reported Adjusted Gross Income (AGI) of student
Dependent Child	Indicates whether the applicant has a dependent child
Marital Status of Student	Options included single, married/remarried, divorced/widowed, separated
Student Earnings	Indicates student's income from work (W2 or self-employment income for the student only, not including spouse or parent)
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Data Integration, Screening, and Cleaning

The data set was received over four different Microsoft Excel spreadsheets with the financial aid data separate from the application data, but linked through a common, anonymized ID number. Before combining, the researcher noted that students could have two different financial aid records (one each for 2018/19 and 2019/20) and multiple application records. These multiple application records existed for the following reasons:

- 1) *Multiple times applying* – If a student applied one semester and did not enroll, but re-applied and enrolled in a later semester, separate records were provided.
- 2) *Multiple majors* – If a student applied to multiple degree programs (i.e., a transfer degree and an applied sciences degree), both programs were captured in separate records.
- 3) *Multiple admit statuses* – A student may have indicated on their application that they were a new student, but if they took a class at a different Virginia community college, even many years ago, they would be considered a transfer or readmitted student. This status may have been changed later in the enrollment process, but both statuses were captured in separate records.
- 4) *Multiple races* – A student may have indicated multiple races on their application which led to separate records.

To accurately test the primary research question, one record per student was desired. The researcher pursued data-cleaning processes to reduce the number of records to one per applicant. Recognizing that most duplicate records came from multiple majors, a new degree program entitled “multiple” was created to collapse multiple degrees into

one record if they were from different degrees. If the records were from the same degree program (i.e., Mechatronics and Information Systems Technology), both were collapsed into the respective program instead of the multiple category (in this example, the Associate of Applied Science degree). Care was taken to ensure that differences in additional fields (i.e., admit status, race, etc.) were appropriately reconciled and captured. For multiple admit statuses, either the transfer or readmit status was kept over new. The assumption was made that the default for all students would be new. Thus, if a transfer/readmit status was in a student's record, it was thought to be significant as it was included either by the student or the college. Similarly, when the records had either transfer or readmit, transfer was kept with the assumption that someone transferring to the school was purposeful in that status. For multiple records where one record had data while the other was blank (i.e., military status, parent's education level), the available data was always included.

Using SPSS, the researcher merged these application records with each of the two financial aid year data sets, ensuring that both ID matches and non-matches created a new record. This combined set resulted in 12,568 records. Some of these records contained only financial aid data and no applicant data, including the dependent variable. These were deleted ($N = 4,862$). Similarly, those records that contained only applicant data and no financial aid data were deleted ($N = 5,103$). While an argument could be made to exclude the financial aid data from the final analysis to increase the number of cases, the robustness, completeness, and importance of the financial data led the researcher to incorporate its use in the final data set. Relatedly, using missing data methods for such a large number of cases would significantly influence the interpretability of the results.

Thus, the decision was made to delete these cases.

Finally, for those applicants that provided financial aid data from both 2018-2019 and 2019-2020, one record was selected that corresponded with the application semester. If a student applied for the Summer 2018, Fall 2018, or Spring 2019 semesters, the 2018-2019 financial aid data was kept. If a student applied for the Summer 2019, Fall 2019, or Spring 2020 semesters, the 2019-2020 financial aid data was kept. Because the financial aid data sets had minimal missing data, no effort was made to pull in data from the non-selected year. The non-selected year was deleted ($N = 608$).

From this process, 1,995 individual records contained both applicant and financial aid data. After further inspection of the variables and the number of responses, listwise deletion was selected to remove a small number of additional cases. These deletions included two applicants who did not indicate a marital status, four applicants whose gender was undeclared, 13 applicants who had an application aspiration that was noncurricular (i.e., they were not seeking a credential or part of a degree program), and seven applicants whose Expected Family Contribution (EFC) was greater than \$150,000. Removal of this last variable was due to concerns about the accuracy of the data. The removal of these 26 applicants brought the final number of complete records to 1,969. This sample size is more than adequate to account for the number of variables that are being considered and as such, there are no concerns about the models having low power.

Within the total data set, there are several populations of students that have been consciously excluded because they did not fit the parameters of this research study. In Virginia, students who wish to take non-credit classes (i.e., personal enrichment or certification classes) must complete a separate application to enroll in these classes.

Students who applied for non-credit classes using this separate application were not included in this data set. A second subset of applicants included dual enrollment students. These are high school students who take community college courses at their high school, during their regular school day, and usually with high school instructors. These students may never step foot on the community college campus but still earn college credit that transfers to a wide variety of, often baccalaureate, institutions. Because of the reduced cost for these courses, nearly all dual-enrolled students did not complete a financial aid application and were subsequently removed during the data clean-up process.

It should be noted that the data set includes eight students who were age 16 at the time of enrollment. The original data did not code these students as dually enrolled. Thus, the assumption is that these are students, possibly home-schooled, who are making the conscious choice to gain additional credits outside of their high school. Because of their minimal number and complete financial aid data, the decision was made to keep these students in the final data set.

Data Conditioning and Final Variables

Pared to 1,969 complete responses, additional work was needed to formulate the data into interpretable and meaningful categories. Each of the variables was modified or coded to provide clear categories that would be easier to analyze based on available data. For dichotomous variables, one grouping was coded as 0 and the other coded as 1. Table 2 provides the categories of the variables based on the dependent variable. More information regarding each variable follows the table.

Table 2*Variable Frequency and Percentage by Enrollment or Non-Enrollment*

Variable	Enrolled	Not Enrolled	Total <i>n</i>	Total %
Race				
Bi/Multiracial	131	32	163	8.3
Black	116	53	169	8.6
Hispanic/Latino	131	48	179	9.1
Other	69	18	87	4.4
White	1068	303	1371	69.6
Gender				
Female	870	311	1181	60.0
Male	645	143	788	40.0
Age^a				
16-18	643	131	774	39.3
19-20	278	51	329	16.7
21-24	200	68	268	13.7
25-30	181	109	290	14.7
31-40	128	75	203	10.3
41-67	85	20	110	5.6
Location				
In Service Area	1242	384	1626	82.6
Not in Service Area	273	70	343	17.4
Admit Type				
New	777	223	1000	50.8
Transfer	410	120	530	26.9
Readmit	328	111	439	22.3
Academic Aspiration/Goals^b				
Transfer	648	199	847	43.0
AA&S	198	43	241	12.2
AAS	240	73	313	15.9
AS	76	14	90	4.6
CSC	61	45	106	5.4
Multiple	292	80	372	18.9
Expected Family Contribution^a				
\$0			839	42.6
Not \$0			1130	57.4
Military Service				
Connected	122	31	153	7.8

Not Connected	1393	423	1816	92.2
Dependency Status				
Dependent	956	202	1158	58.8
Independent	559	252	811	41.2
Marital Status				
Married	185	78	263	13.4
Not Married or Other Status	1330	376	1706	86.6
Student Earnings ^a				
\$0			850	43.2
Not \$0			1119	56.8
Semester				
Summer 2018	107	65	172	8.7
Fall 2018	566	117	683	34.7
Spring 2019	144	78	222	11.3
Summer 2019	159	67	226	11.5
Fall 2019	400	89	489	24.8
Spring 2020	139	38	177	9.0

Note. $N = 1969$.

^aAge, Expected Family Contribution, and Student Earnings are each categorized as a continuous variable. Age is arbitrarily broken down in this table to reflect smaller age ranges.

^bDegree programs: AA&S = Associate of Arts and Sciences; AAS = Associate of Applied Sciences; AS = Associate of Science; CSC = Career Studies Certificate

Dependent Variable

Per my research questions, this data set has one dichotomous, dependent variable that answers whether a student applied and enrolled (1) or applied and did not enroll (0).

Independent Variables

This data set includes many independent variables for which research has indicated an important connection to the prediction of enrollment. The literature review previously discussed the importance of these variables and their potential to explain college decision-making. Each of the variables in this data set were connected to one of the four

broad categories of data: demographics, academic experience, socioeconomic status, and familial roles. Additionally, a control variable consisting of the semester enrolled was utilized. Each of the six semesters – Summer and Fall 2018, Spring, Summer, and Fall 2019, and Spring 2020 – were dummy coded with the Fall 2018 semester being considered the reference variable. Consideration of how to present these variables is further discussed.

Demographic Variables.

Race. Potential applicants could select one of seven different races: American Indian, Asian, Black, Hawaiian, Hispanic/Latino, White, and Other/Unspecified. Additionally, applicants could select multiple categories to indicate multiracial or biracial heritage. A separate category, called Bi/Multiracial, was created to accurately reflect this data. Once this category was extracted, only Black, Hispanic/Latino, and White had a large enough population size to remain as an individual category. A fifth category, called Other, included those who selected American Indian, Asian, Hawaiian, or otherwise did not indicate a race. These were combined since each category had less than 30 people – not enough to statistically justify a separate category. Considering the multiple categories and the overwhelmingly White population at this community college, the five categories – White, Black, Hispanic/Latino, Biracial, and Other – were dummy coded with White as the reference group.

Gender. Gender is measured as a dichotomous variable with male (0) and female (1) as the two choices.

Age. The primary research question seeks to evaluate students at the time of enrollment. With the birthdate of each applicant included in the data set, the researcher

was able to calculate the age of an applicant at the time of enrollment for each semester. To provide consistency, the 15th of August (Fall), January (Spring), and May (Summer) was chosen as the cutoff date for each semester. This date was chosen because it was close to the beginning of each of the six semesters under evaluation. With the applicant's age calculated, this variable is a continuous variable ranging from 16 to 67.

Location. In Virginia, each community college has a defined service region based on a person's county of residence. Most students live within this defined service region. Others choose the community college for a specific program or to be close to extended family while maintaining a primary residence outside of the service area. To ease interpretability, each zip code was categorized into a dichotomous variable based on the applicant's primary residence either out of the service area (0) or in the service area (1). For zip codes that were in multiple counties, the researcher utilized a map to evaluate which county contained more of the zip code and placed the zip code in the appropriate category.

Academic Experience Variables.

Admit Type. This variable, categorical in nature, serves as a proxy for an applicant's previous education experience. Four possible responses included: new (no previous higher education experience); transfer (students applying from a non-VCCS institution); intercollege transfer (students applying from another VCCS institution); and readmit (students applying after three terms of non-attendance). Due to low population size for the transfer students, it was combined with intercollege transfer creating three categories. This variable was recoded as a dummy variable with new being the reference category.

Academic Aspiration/Goals. The data for this variable is robust and granular, considering there were over 95 credential options that students could select. Many categories had less than 20 applicants. To provide ease in interpretability, each credential was placed in its corresponding degree category. These categories include: Associate of Arts and Sciences; Associate of Applied Sciences; Associate of Science; College Transfer; Career Studies Certificate/Certificate; and Multiple (for students seeking multiple degrees). It should be noted that the applicants within the College Transfer category are all seeking an Associate of Arts and Sciences degree. However, as the college's largest credential by a wide margin, the decision was made to separate these applicants from the other applicants to provide additional clarity. This categorical variable was dummy coded with College Transfer being the reference category.

Socioeconomic Status Variables.

Expected Family Contribution (EFC). This continuous variable, determined by a FAFSA processor, indicates the amount of money a family, not just an individual, should be able to provide for college expenses. During analysis of this variable, there were concerns that some of the amounts were outliers and would skew the data. As mentioned earlier, seven responses over \$150,000 were listwise deleted. Further, over 42% of the applicants have an expected family contribution of \$0 resulting in a significant positive skew. To address this, the variable was natural log transformed. The resulting continuous variable is included in the data set.

Student Earnings. Students earn income from work, whether from a W2 tax form or self-employment income. This variable, coming from the FAFSA information, does not include any financial resources coming from a spouse or parent, but may be

indicative of the presence of a job for the student. Like the expected family contribution, there were concerns about skewness due to 43% of the values being \$0. This continuous variable ranged from \$0 to \$118,773 with one case being range restricted and modified because of a negative earning. To reduce the positive skewness, the variable was natural log transformed with the resulting continuous variable being included in the final data set.

Familial Variables.

Military Service. This variable considered an applicant's connection with the military, ranging from (in)active duty to reserve to veteran. Other options included being a dependent or spouse of someone in the military. All categories had a small number of responses and were combined into a dichotomous variable of connection with the military (0) or no military connection/not indicated/blank (1).

Dependency Status. Based on the given responses on their FAFSA application, this dichotomous variable indicated whether the applicant was dependent (0) or independent (1).

Marital Status of the Student. Applicants provided their marriage status as part of their FAFSA application and could indicate Single, Married, Divorced/Widowed, or Separated. To increase interpretability, these categories were collapsed into a dichotomous variable of married (0) and not married or other status (1).

There were three additional variables for which the researcher had appropriate rationale to include in the study. Unfortunately, for various reasons, the variables were not included in the final variable list. The three variables were adjusted gross income (student), number of dependents/children, and first-generation student. The last of these was particularly disappointing considering the significant literature around this topic, but

with 41.4% of cases being blank for this variable, the researcher decided to remove this variable from evaluation due to its lack of interpretability.

Analysis Model

For this research study, there is one discrete, dependent variable: Did the student enroll or not? There are multiple independent variables that are dichotomous, categorical, or continuous. Considering the research question that seeks to predict who will enroll based on these independent variables, logistic regression is the appropriate analytic strategy (Tabachnick & Fidell, 2007). Utilizing logistic regression allows the researcher to calculate the odds (or probability) of the dependent variable happening based on the combination of independent variables (Tabachnick & Fidell, 2007). Logistic regression does not assume the independent variables are normally distributed, linearly related to the dependent variable, or display homogeneity of variance with respect to the categories of the dependent variable. This method does assume linearity between the independent variables and the logit of the dependent variable.

Prior to running a logistic regression, it is necessary to address potential concerns in several areas, including multicollinearity amongst continuous, independent variables. SPSS was used to address these concerns as well as to run the logistic regressions. In this data set, there are three continuous variables: Age, Expected Family Contribution, and Student Earnings. Collinearity diagnostics were run for these variables to test for potential correlations, tolerance, and variance inflation factor (VIF). All results fell within normal ranges with no concerns about multicollinearity. Additionally, logistic regression can have sensitivity to outliers. Using the Mahalanobis distance test, the researcher initially found about 60 cases that were flagged as being an outlier. It was also noted that

for the Expected Family Contribution and Student Earnings variables, over 42% of the values on each one was zero resulting in a significant positive skew. With these two pieces of information the decision was made to log transform these two variables to reduce the skewness of the variable and to normalize and/or center the non-zero values. After recalculating the Mahalanobis distance using these log-transformed values, the number of outliers was reduced to 19. While this is not a small number, the large amount of power within the overall data set significantly reduces the concerns regarding these outliers.

After checking the various assumptions related to logistic regression, models were designed to test whether applicants enrolled or did not enroll in community college. The control variable for each of the models included the semester that the student enrolled. Five models were designed corresponding with the primary research question and the four secondary questions. Model 1 included only the demographic variables – race, gender, age, and location – each of which is essentially immutable. Because of these consistent variables, the demographic variables, along with the semester control variable, were included in all five models.

Model 2 evaluated the academic variables of admit type and academic aspiration while controlling for the demographic variables. Model 3 considered the socioeconomic variables of expected family contribution (EFC) and student earnings while controlling for the demographic variables. Model 4 isolated the familial variables of military connection, dependent status, and marital status while controlling for the demographic variables. Lastly, Model 5 compared the intercept only model to a model with all the variables of interest in the study. It is hypothesized that this model would be statistically

significant in predicting whether an applicant would enroll or not enroll.

Limitations

As with many research projects, there are some limitations regarding the data, both in the overall scope of the project and the data set itself. One area for which this project is limited is the inherent nature of measuring student behavior and college choice. As previously discussed, linearity of the college search process is often assumed. However, actual behavior is often far from linear. Bahr (2013) provides an example of how measurement of non-linear processes is often simplified to “the traditional input-output analysis” (p. 140). Some outcomes are predicted based on demographic characteristics or a small set of proximal or mediating variables that describe in a limited fashion what students actually did – a best attempt at describing the numerous and varied pathways students use to reach the dependent variable. Bahr (2013) demonstrates that even the best models cannot account for the host of assumptions needed about the “linearity and uniformity” of student behaviors (p. 140). This study, while far from perfect, attempts to provide some deeper level of understanding considering its limits based on the available data.

Relatedly, one of the themes that surfaced from the theoretical analysis was the need for nuanced data analysis at the institutional or individual level. On one hand, this data set achieves a small measure of this nuanced analysis by considering a single institution. Even more granular is the evaluation of individual students based on data provided from their FAFSA application. However, the deep questions of why students enroll or do not enroll at the community college can only be partially answered with the present data. The deep nuances that Iloh (2018) articulates regarding information, time,

and opportunity can better be answered by considering qualitative research methods that involve communication with individual students.

This secondary data set also has limitations because it was created from data that was already collected in some other way, namely through an application or student financial aid data. Thus, the researcher was limited by the data to the available variables and the categories provided. Additionally, several independent variables within the data set contained missing data. Of note, the parent's education level was only answered by some of the applicants and could not be included in the final data set. Regarding the Free Application for Federal Student Aid (FAFSA) data, not all students who applied to the college completed the FAFSA. While this study could have been limited to just application (i.e., primarily demographic) data, the richness of the FAFSA information spurred the decision to take a narrower, but more robust, path. Consequently, several valid application responses were removed because of the lack of FAFSA data. Further consideration of non-enrollees without FAFSA information may result in different findings regarding the college decision-making process. With these limitations considered, there is still sufficient support to pursue analysis of the data and conduct the research study.

Chapter Four: Results

This study considers how various independent variables could predict the enrollment of community college students after they applied to a single institution. Utilizing logistic regression, a research study seeking to answer one primary and four secondary questions was designed. Five models were created to evaluate different types of variables. Each model included a control variable of the semester the student applied and enrolled or did not enroll. This variable was dummy coded with Fall 2018 as the reference group.

Model 1 included the control variable and each of the demographic variables – race (dummy coded with white as the reference), gender, age, and location. The results of this model show that this model does improve the ability to predict student enrollment when compared with the null model, $\chi^2 = 107.620$ ($p < .001$), Nagelkerke = 0.081. Table 3 provides the slope, standard error, Wald statistic, statistical significance, odds ratio, and confidence intervals for Model 1.

Of note within Model 1 (Table 3) are several variables that were found to be statistically significant. Within the race variable, both Black and Hispanic/Latinx were found to be significant ($p < .05$). The odds of Black students enrolling decreased by a factor of 0.564 when compared with White students when keeping scores on other predictors in the model constant. Said another way, the odds of enrolling in the community college increase by a factor of 1.773 for White students as compared to Black students. Similarly, the odds that Hispanic/Latinx students enrolled decreased by a factor of 0.658 when compared with White students. The odds of enrollment for White students increased by a factor of 1.520 when compared with Hispanic/Latinx students.

Two other demographic variables, gender and age, were also found to be significant in Model 1. Holding scores on other predictors in the model constant, the odds of enrolling decrease by a factor of 0.632 for females compared to males. This means that the odds of enrolling increase by a factor of 1.582 for males compared to females. Age in Model 1 was also found to be statistically significant. Holding scores on other predictors in the model constant, the log of odds of enrolling are, on average, 0.024 lower for each year increase in age. Said another way, the odds of enrolling decrease by a factor of 0.976 for every year older.

Table 3*Model 1: Demographic Variables*

Variables	<i>B</i> (<i>SE</i>)	Wald	<i>p</i>	<i>OR</i>	95% CI	
					<i>LL</i>	<i>UL</i>
Race						
Black	-.574 (.185)	9.653	.002	.564	.392	.809
Hispanic/Latinx	-.418 (.189)	4.909	.027	.658	.455	.953
Bi/Multiracial	.082 (.213)	.150	.699	1.086	.715	1.649
Other	.042 (.281)	.023	.880	1.043	.602	1.808
Gender (Female)	-.460 (.117)	15.358	<.001	.632	.502	.795
Age	-.024 (.007)	13.896	<.001	.976	.964	.989
Location	-.161 (.151)	1.142	.285	.851	.633	1.144
Semester						
2018 Summer	-1.051 (.190)	30.487	<.001	.350	.241	.508
2019 Spring	-.901 (.177)	25.873	<.001	.406	.287	.575
2019 Summer	-.738 (.180)	16.738	<.001	.478	.336	.681
2019 Fall	-.063 (.157)	.160	.689	.939	.690	1.278
2020 Spring	-.153 (.215)	.509	.476	.858	.563	1.307
Constant	2.648 (.236)	126.389	<.001	14.131		

Note. *B* = slope; *SE* = standard error; *OR* = odds ratio; *CI* = confidence interval; *LL* = lower limit; *UL* = upper limit.

In addition to the control variable and four demographic variables found in Model 1, two academic variables were added to Model 2. These were admit type (dummy coded with New as the reference) and academic goal/aspiration (dummy coded with the transfer degree as the reference). Compared with the null model, this model does improve the ability to predict student enrollment, $\chi^2 = 128.862$ ($p < .001$), Nagelkerke = 0.096. Table 4 provides the slope, standard error, Wald statistic, statistical significance, odds ratio, and confidence intervals for Model 2.

The same four demographic variables that were significant in Model 1 – Black and Hispanic/Latinx race, gender, age – were significant in Model 2 as well with similar odds ratios. While not statistically significant, the odds that transfer and readmitted students would enroll increase by a factor of 1.098 and 1.179, respectively, as compared with new enrollees when other predictor scores were held constant.

Within academic goals, only those students who sought a career studies certificate had a statistically significant finding. These students also happen to be the only category for which the odds of enrollment decreased when compared with students who selected the transfer degree. The odds of enrollment decreased by a factor of 0.482 for students who sought a career studies certificate as compared with students who desired a transfer degree holding all other predictor scores constant. Said another way, the odds of enrolling in a transfer program increased by a factor of 2.075 when compared with career-studies certificate students.

Table 4*Model 2: Demographic and Academic Variables*

Variables	<i>B (SE)</i>	Wald	<i>p</i>	<i>OR</i>	95% CI	
					<i>LL</i>	<i>UL</i>
Race						
Black	-.578 (.186)	9.632	.002	.561	.389	.808
Hispanic/Latinx	-.398 (.191)	4.351	.037	.671	.462	.976
Bi/Multiracial	.043 (.215)	.040	.841	1.044	.686	1.590
Other	.056 (.284)	.039	.844	1.058	.606	1.846
Gender (Female)	-.437 (.120)	13.166	<.001	.646	.510	.818
Age	-.024 (.007)	10.705	.001	.977	.963	.991
Location	-.160 (.167)	.914	.339	.852	.615	1.182
Semester						
2018 Summer	-1.105 (.194)	32.452	<.001	.331	.226	.484
2019 Spring	-.944 (.180)	27.482	<.001	.389	.273	.554
2019 Summer	-.789 (.183)	18.667	<.001	.454	.318	.650
2019 Fall	-.105 (.158)	.443	.506	.900	.660	1.228
2020 Spring	-.137 (.218)	.398	.528	.872	.569	1.336
Admit Type						
Transfer	.093 (.150)	.387	.534	1.098	.818	1.472
Readmit	.164 (.154)	1.147	.284	1.179	.872	1.592
Academic Goal ^a						
AA&S	.282 (.192)	2.156	.142	1.326	.910	1.932
AAS	.067 (.166)	.164	.685	1.070	.772	1.481
AS	.376 (.314)	1.437	.231	1.457	.787	2.696
CSC	-.729 (.225)	10.551	.001	.482	.311	.749
MUL	.274 (.157)	3.025	.082	1.315	.966	1.790
Constant	2.520 (.257)	95.829	<.001	12.428		

Note. *B* = slope; *SE* = standard error; *OR* = odds ratio; *CI* = confidence interval; *LL* = lower limit; *UL* = upper limit.

^aAcademic Goal degree programs: AA&S = Associate of Arts and Sciences; AAS = Associate of Applied Sciences; AS = Associate of Science; CSC = Career Studies Certificate; MUL = Multiple programs.

Like Models 1 and 2, Model 3 included the control variable and four demographic variables. Instead of the academic variables found in the second model, Model 3 included socioeconomic variables including expected family contribution (EFC) and student earnings. Each of the socioeconomic variables is a continuous variable that was log transformed to account for concerns in the data. From a model perspective, this model does improve the ability to predict student enrollment compared with the null model, $\chi^2 = 132.729$ ($p < .001$), Nagelkerke = 0.099. Table 5 provides the slope, standard error, Wald statistic, statistical significance, odds ratio, and confidence intervals for Model 3.

Consistent with Models 1 and 2, Black students, Hispanic/Latinx students, and gender were significant demographic variables with similar odds ratios. Age was not significant in this model which was different than the first two models. Both socioeconomic variables were statistically significant. Expected family contribution had an odds ratio of 1.063. This can be interpreted that for every log dollar, the odds of enrollment increased by a factor of 1.063. Said another way, the log odds of enrolling increased by a factor of 0.061 for each additional log dollar of expected family contribution. For the variable of student earnings, the log odds of enrolling decreased by a factor of 0.962 for each one unit increase in log earnings while keeping all other predictors constant.

Table 5*Model 3: Demographic and Socioeconomic Variables*

Variables	<i>B (SE)</i>	Wald	<i>p</i>	<i>OR</i>	95% CI	
					<i>LL</i>	<i>UL</i>
Race						
Black	-.468 (.188)	6.173	.013	.626	.433	.906
Hispanic/Latinx	-.375 (.191)	3.849	.050	.687	.472	1.000
Bi/Multiracial	.163 (.216)	.572	.449	1.177	.771	1.797
Other	-.014 (.282)	.002	.962	.987	.567	1.715
Gender (Female)	-.399 (.119)	11.297	<.001	.671	.532	.847
Age	-.013 (.007)	3.024	.082	.987	.973	1.002
Location	-.128 (.153)	.696	.404	.880	.652	1.188
Semester						
2018 Summer	-1.053 (.193)	29.896	<.001	.349	.239	.509
2019 Spring	-.850 (.179)	22.599	<.001	.428	.301	.607
2019 Summer	-.713 (.181)	15.423	<.001	.490	.344	.700
2019 Fall	-.033 (.158)	.044	.833	.967	.710	1.319
2020 Spring	-.125 (.216)	.334	.563	.883	.578	1.348
EFC	.061 (.014)	20.125	<.001	1.063	1.035	1.092
Student Earnings	-.039 (.014)	8.023	.005	.962	.936	.988
Constant	2.215 (.255)	75.139	<.001	9.158		

Note. *B* = slope; *SE* = standard error; *OR* = odds ratio; *CI* = confidence interval; *LL* = lower limit; *UL* = upper limit; EFC = Expected Family Contribution.

Model 4 included the control variable and the four demographic variables as well as the three familial variables of military connection, dependent status, and marital status. Compared with the null model, this model improves the ability to predict student enrollment, $\chi^2 = 127.588$ ($p < .001$), Nagelkerke = 0.095. Table 6 provides the slope, standard error, Wald statistic, statistical significance, odds ratio, and confidence intervals for Model 4.

The demographic variables of Black and Hispanic/Latinx continued to be

statistically significant as did gender. For the familial variables of concern in Model 4, only dependent status was statistically significant. The odds that independent students will enroll decreased by a factor of 0.494 as compared to dependent students. In other words, the odds of dependent students enrolling increased by a factor of 2.024 compared with independent students. For the other two familial variables that were not statistically significant, the odds of enrollment increased for married students and those connected with the military as compared to their unmarried and disconnected counterparts.

Table 6*Model 4 – Demographic and Familial Variables*

Variables	<i>B</i> (<i>SE</i>)	Wald	<i>p</i>	<i>OR</i>	95% CI	
					<i>LL</i>	<i>UL</i>
Race						
Black	-.506 (.187)	7.313	.007	.603	.418	.870
Hispanic/Latinx	-.480 (.191)	6.322	.012	.619	.426	.900
Bi/Multiracial	.144 (.216)	.441	.507	1.154	.756	1.764
Other	-.506 (.187)	7.313	.880	.958	.550	1.668
Gender (Female)	-.400 (.120)	11.206	<.001	.670	.530	.847
Age	.000 (.009)	.000	.984	1.000	.982	1.018
Location	-.119 (.152)	.614	.433	.887	.658	1.196
Semester						
2018 Summer	-1.019 (.192)	28.187	<.001	.361	.248	.526
2019 Spring	-.836 (.179)	21.899	<.001	.433	.305	.615
2019 Summer	-.724 (.181)	15.942	<.001	.485	.340	.692
2019 Fall	-.046 (.158)	.083	.773	.955	.701	1.302
2020 Spring	-.114 (.215)	.280	.597	.892	.585	1.361
Military Connection	-.190 (.219)	.754	.385	.827	.539	1.270
Dependent	-.704 (.157)	20.040	<.001	.494	.363	.673
Marital Status	-.130 (.176)	.550	.458	.878	.622	1.238
Constant	2.588 (.384)	45.316	<.001	13.298		

Note. *B* = slope; *SE* = standard error; *OR* = odds ratio; *CI* = confidence interval; *LL* = lower limit; *UL* = upper limit.

Model 5 included all the variables in the data set. This included the control variable, the four demographic variables, the two academic variables, the two socioeconomic variables, and the three familial variables. The results of the chi-square test indicate that the model containing the full set of predictors represents a significant improvement in fit as compared with an intercept-only model in predicting student enrollment, $\chi^2 = 162.081$ ($p < .001$), Nagelkerke = 0.120. Table 7 provides the slope, standard error, Wald statistic, statistical significance, odds ratio, and confidence intervals for Model 5.

Like Models 1-4, several variables were statistically significant ($p < .05$) in Model 5. Within the demographic variables, the odds that Black students would enroll decreased by a factor of 0.638 when compared with their White counterparts, holding all other variables constant. This means that the odds of enrolling were 1.567 times higher for White students than Black students. Similarly, the odds that Hispanic/Latinx students would enroll decreased by a factor of 0.673 when compared with their White counterparts, holding all other variables constant. Gender was also found to be significant within Model 5 as the odds that males would enroll were 1.422 times higher than females holding all other variables constant.

Within the academic variables, two categories were found to be statistically significant. Those students who were seeking readmittance to the college had odds of enrollment that were 1.398 times higher as compared to new students. Like Model 2, the odds of enrollment for those students seeking a career studies certificate decreased by a factor of 0.494 compared with those students seeking a transfer degree. This was the only academic goal category where students were less likely to enroll as compared to those

students seeking the transfer degree, the reference group. Both socioeconomic variables were found to be statistically significant. Holding all other variables constant, the odds of enrollment increased by a factor of 1.047 for each one unit increase in log expected family contribution. Conversely, for each one unit increase in log student earnings, the odds of enrollment decreased by a factor of 0.970. Only one of the familial variables was statistically significant. The odds that independent students would enroll decreased by a factor of 0.606 when compared with their dependent counterparts.

Table 7*Model 5: Demographic, Academic, Socioeconomic, and Familial Variables*

Variables	<i>B</i> (<i>SE</i>)	Wald	<i>p</i>	<i>OR</i>	95% CI	
					<i>LL</i>	<i>UL</i>
Race						
Black	-.449 (.192)	5.506	.019	.638	.438	.929
Hispanic/Latinx	-.395 (.195)	4.113	.043	.673	.460	.987
Bi/Multiracial	.138 (.219)	.398	.528	1.148	.747	1.764
Other	-.026 (.287)	.008	.927	.974	.555	1.709
Gender (Female)	-.352 (.123)	8.129	.004	.703	.552	.896
Age	.000 (.010)	.000	1.000	1.000	.981	1.019
Location	-.089 (.169)	.279	.597	.914	.656	1.274
Semester						
2018 Summer	-1.096 (.197)	31.058	<.001	.334	.227	.491
2019 Spring	-.881 (.182)	23.445	<.001	.414	.290	.592
2019 Summer	-.759 (.184)	16.957	<.001	.468	.326	.672
2019 Fall	-.080 (.160)	.248	.618	.923	.675	1.264
2020 Spring	-.108 (.220)	.240	.625	.898	.584	1.381
Admit Type						
Transfer	.164 (.153)	1.141	.285	1.178	.872	1.592
Readmit	.335 (.159)	4.446	.035	1.398	1.024	1.908
Academic Goal ^a						
AA&S	.248 (.194)	1.627	.202	1.281	.876	1.874
AAS	.074 (.168)	.193	.660	1.077	.775	1.496
AS	.342 (.318)	1.161	.281	1.408	.756	2.624
CSC	-.705 (.224)	9.874	.002	.494	.318	.767
MUL	.244 (.160)	2.345	.126	1.277	.934	1.746
EFC	.046 (.015)	9.681	.002	1.047	1.017	1.077
Student Earnings	-.030 (.015)	3.883	.049	.970	.942	1.000
Military Connection	-.169 (.222)	.574	.449	.845	.546	1.307
Dependent	-.501 (.180)	7.768	.005	.606	.426	.862
Marital Status	-.049 (.179)	.076	.782	.952	.671	1.351
Constant	2.146 (.412)	27.065	<.001	8.549		

Note. *B* = slope; *SE* = standard error; *OR* = odds ratio; *CI* = confidence interval; *LL* = lower limit; *UL* = upper limit; EFC = Expected Family Contribution

^aDegree programs: AA&S = Associate of Arts and Sciences; AAS = Associate of Applied Sciences; AS = Associate of Science; CSC = Career Studies Certificate; MUL = Multiple

All the models included a control variable based on the semester that a student enrolled. For each of the models, those students that enrolled in 2018 Summer, 2019 Spring, and 2019 Summer had statistically significant findings. Each of the five semesters included in the model, though, had negative slopes meaning that students in these semesters were less likely to enroll as compared to the reference group of Fall 2018. For the three significant semesters in Model 5, the odds that students would enroll decreased by a factor of between 0.334 and 0.468 when compared with Fall 2018 holding all other variables constant.

As expected, the chi-square omnibus test for each model improved the prediction of student enrollment when compared with the null model. While this statistic shows statistical significance for each of the models, it does not address the practical significance within the models. Two statistics, Cox & Snell and Nagelkerke, were computed to obtain a snapshot of the variance accounted for in the model. While they are not the same as R^2 estimates used in linear regression, they can clarify how models compare with each other. Results of these statistics are found in Table 8. Additionally, the classification table produced by SPSS indicated that Model 5 could accurately predict the enrollment decision of the students 77.4% of the time.

Table 8

Comparison of Logistic Regression Models and Pseudo-Effect Sizes

Model	χ^2	k	Cox & Snell R^2	Nagelkerke R^2
Model 1	107.620	12	.053	.081
Model 2	128.862	19	.063	.096
Model 3	132.729	14	.065	.099
Model 4	127.588	15	.063	.095
Model 5	162.081	24	.079	.120

Chapter Five: Findings, Discussion, and Implications

The current research study contributes to the diverse postsecondary literature surrounding the topic of college choice, student decision making, and enrollment management. One primary question – what student-level factors are associated with enrollment at an open-enrolled community college post application? – and four secondary questions were asked to identify enrollment decisions of potential students. Using a theoretical model based largely on Iloh’s (2018) model of college choice, 11 variables were included to predict whether students would enroll or would not enroll in a mid-size community college in western Virginia. The variables were grouped into four broad categories that aligned with the literature on college decision-making: demographic, academic, socioeconomic, and familial. Results from the analyses showed that several variables were significant in predicting enrollment. While these results are important, interpreting and providing suggestions for application of the data within the larger postsecondary enrollment sphere is a primary goal of this study. Discussion surrounding the results of the individual variables begins this section followed by a broader consideration of the various models. Further discussion considers implications for practitioners and leaders within higher education.

Findings from Individual Variables

Demographic Variables

There were four demographic variables within the research study: race, gender, age, and location. Each variable was included in each of the models because the variables were considered essentially immutable.

Race. As White was considered the reference group in the analysis, each of the

other race categories was compared to the White category. Consistently, through each model, both Black and Hispanic/Latinx students were less likely to enroll than their White counterparts. While not statistically significant, Bi/Multiracial students were more likely to enroll while the catch-all category of Other (including Asian, American Indian, and Hawaiian) was slightly less likely. Based on the literature, it is well documented that minorities are less likely to enroll in college overall as compared to Whites (Arnold et al., 2009; Cox, 2016). This was confirmed in the present study. What was more surprising, though, was how large a decrease there was in the log odds of Black and Hispanic students enrolling as compared to their White counterparts. There are several reasons as to why this may be.

From a statistical perspective, simply looking at the frequencies indicates that a higher percentage of Black and Hispanic students did not enroll as a percentage of their race's total as compared with White students. These numbers provided a preview of the results of the full logistic regression which found that Blacks (odds decreased by a factor of 0.564) and Hispanics (odds decreased by a factor of 0.658) did not enroll at the same rate as compared with White students. These are not insignificant amounts, even when considering that White students make up nearly 70% of the total sample population.

Viewing these results through the lens of Iloh's (2018) model, access to information, time, and opportunity is likely different for Black and Hispanic students when compared to White students. As noted in the literature review, various studies have shown that the information provided to Black and Hispanic students can vary greatly and this information plays a significant role in the decision-making process (Freeman, 2005; Hamrick & Stage, 2004; Lowry, 2017; Muhammad, 2008; Person & Rosenbaum, 2006).

One of the limitations of this study is the fact that no students were interviewed to gain a qualitative understanding of the information received or what may have led to the disparity. Thus, it is unknown whether Black and Hispanic students had access to activities or information that have been shown to increase enrollment like meeting with an advisor or attending an orientation.

One of the benefits of Iloh's (2018) model is its' flexibility to be considered at multiple levels. One level is the context of information related to enrollment. A second broader level, though, considers information, or the lack thereof, in understanding the long-term benefits of a college education. Immerwahr (2003) and Perna (2006) focus on this when discussing college broadly, particularly considering how many minority students, including Hispanics, do not understand the value of college. This lack of information may reduce the drive, ambition, and perseverance that minority students need to apply and ultimately enroll in college. Again, this study did not capture this data, but it is important to consider how a lack of information about college benefits may influence the choices and decision-making of Black and Hispanic students when compared to White students.

Gender. Female students outnumber male students in this community college by just less than a 1.5 to 1 ratio. The data set provides an accurate and representative sample of the actual ratio found in the college at large. Yet the odds that a female student will enroll decreases by a factor of 0.703 in Model 5 as compared to male students. Considering that this variable was significant in all five models, further investigation into this gap between males and females is warranted.

A potential explanation may involve consideration of gender and academic

goals/aspirations (i.e., degree type). While community colleges, including the one in this study, provide a wide variety of majors and degrees, there is often heavy emphasis on careers that are traditionally (and maybe even stereotypically) dominated by males. Aeronautics, electrical, computer, manufacturing, and engineering majors are just some of the degree programs offered at this community college that likely appeal to more males than females. A crosstabs evaluation of gender and degree type indicates that males outnumber females in both the Applied Sciences and Science degree types. The other degree types, except for the Arts and Sciences degree that was evenly split by gender, are much closer to the overall gender split that is much more weighted toward the female. Thus, it could be that males, with all other variables being equal, are more attracted to the degree programs provided by this community college and have a clearer picture of their vocational direction. An argument could be made that an interaction effect is taking place between the variables of gender and degree type. While this is possible, the testing of interactions was beyond the scope of this research study, but would certainly be interesting to consider in further testing.

Conversely, women may be more apt to desire a course of study more readily available at a four-year institution, indicated by their higher selection of the transfer degree. Their likelihood of enrollment at the community college may only be as a backup plan for a four-year institution. Do female students consider applying to multiple higher education institutions more so as compared to male students? Further investigation regarding this could be evaluated with data from the National Student Clearinghouse, but obtaining this data was beyond the scope of this study.

Other forces may be at play regarding this variable. Family influences or family

systems may be stronger on females than males in discouraging enrollment in higher education. Female minorities may face additional barriers because of their skin color. Whatever the reason or reasons, additional consideration of the barriers facing females in the time between application and enrollment is warranted and is ripe for further research and study.

Age. Community colleges are home to some of the most diverse students, particularly when it comes to age. Although students aged 18-24 years (i.e., traditional students) have dominated the research landscape, this study sought to include a broader cross-section of students in the college decision-making process. Over 30% of the potential students within this data set were 25 or older when they applied to this community college providing rich data on this variable.

As a demographic variable, it was included in all five models. It was found to be statistically significant in each model. In Model 1, the odds a student will enroll decreases by a factor of 0.976 for each year older. Similar findings were found in Models 2 and 3. The variable appeared to not behave correctly in Models 4 and 5, possibly because of a moderate to high correlation (.707) with the variable focusing on dependent or independent status. No alternative considerations were made regarding this behavior and as such, little can be gleaned from the inclusion of this variable in these two models.

The data from Models 1-3 reinforces previous literature regarding increases in age: attending college is less likely the older one gets. As people age, more variables come into play, like work and family, that may disrupt plans to attend college. Simply put, college attendance for older adults costs more, not in a financial sense, but in the time needed to be successful. Iloh (2018) recognized this in her contexts of both time and

opportunity. Constraints in these areas will reduce the chances students will enroll and be successful in the college environment.

Location. In many studies on student decision-making on college, the distance from a student's home to a college is an important variable. With the advent of online instruction and communication, the importance of this variable may be changing. Regardless, for community colleges, the college is often bounded by state geographic regulations and has a clear focus on the limited region it serves. Such is the case with the community college in this study whose primary focus is a three-county area. Thus, it is not surprising that this variable was not statistically significant considering the focused attention on people living in the service region.

For the students that choose this community college from out of the service region, it is often because of specific programs that are only available at this college. Thus, if attending, they would likely enroll with a specific course of study in mind. In this case, it is not surprising to see students from within the service region as less likely to enroll. While not a statistically significant variable, viewing the variable in the context of this community college helps provide some clarity on the reduced impact of location within the community college setting.

Academic Variables

Admit Type. One of the more fascinating results coming from this study dealt with the type of admittance that students had and how that played into their enrollment decision. When just including the two academic variables of admit type and academic goals (Model 2), this variable was not statistically significant with only moderate positive slopes. However, when all the variables were included (Model 5), one of the categories of

admit type became statistically significant with readmitted students more likely to enroll than new students.

These results are not surprising considering that the student is choosing to re-enroll. By definition, these students have been out of the community college for at least three consecutive semesters which means they have at least tried some college at some point. They are at least marginally familiar with the college environment and if re-enrolling, are choosing this academic path. Compared with a new student who may or may not have the experience or understanding of the collegiate environment, it makes sense that those who are reentering college are more likely to enroll. Similarly, transfer students are more likely to enroll than new students, albeit at not as significant a level as those students who were readmitted.

Much of the focus of this study concerns the time between application and enrollment where information is a key component in the decision-making process. Alluding to Iloh's (2018) consideration of information as a key component of the decision-making process, students who were readmitted or transferred in from another institution have gone through both the application and enrollment process previously. Thus, they possess valuable information and, maybe more importantly, experience in navigating the collegiate enrollment process. Perhaps they are even more likely to apply this new information and experience to subsequent enrollment experiences. This connection with Iloh's (2018) context of information can be a significant aid in identifying the different needs that incoming students may have and how institutions can address those varying needs.

Academic Goals/Aspirations. One of the questions that young children regularly

get asked is what they want to be when they grow up. For some children, the answer is known in middle school, leading to a clear choice of major within the collegiate setting. For others, there may be broad interests, but a lack of direction regarding the major or career they want to pursue. While each individual person is unique in if they want to pursue postsecondary education and what they choose to pursue, their degree program can provide some clues regarding their views about the collegiate experience, at least in a broad sense.

Within the community college setting, the transfer degree is the equivalent to the general education requirements found in many four-year liberal arts colleges. It is often a catch-all for students desiring specific majors not found in the community college. It is also an opportunity for students to explore vocations before deciding on a career field with upper-level coursework. In essence, the degree can buy some time should a student not have a clear direction. In this study, the transfer degree, a subset of the Associate of Arts and Sciences degree, was placed in its own category and used as the reference group for this variable. Conversely, students who were in other Arts and Sciences (Business Administration, Teacher Education, and Psychology), Applied Science, Science, or multiple degrees would generally be thought to have more direction regarding their career goals considering they had selected a specific degree program (Cohen et al., 2014).

All of these categories, save for the Career Studies Certificate, had positive slopes as compared to the transfer category meaning that students who selected a specific degree program or major were more likely to enroll than those who had selected or were placed in the transfer degree. This is not unexpected considering the career aspirations that would be expected from specific majors. Students who have some direction of focus

would be more likely to enroll and pursue a degree than someone who has not discovered their vocational calling (Jenkins & Cho, 2012; Moore & Shulock, 2011). This may be most evident in the Associate of Science degree which had a higher odds ratio (1.408 in Model 5) than the other degrees when compared to the transfer degree. In the community college utilized in this study, the Associate of Science degree is generally considered one of the more challenging degree programs. Students who choose to enroll in majors under this degree may be more driven than the average student and may have clearer direction in their educational pursuits.

The one consistent result in this data was the category that contained Career Studies Certificates. While this category was statistically significant, students pursuing these credentials were less likely to enroll as compared to those in the transfer degree. These certificates require less time or financial investment due to the number of credits required – usually between 10 and 15 credits. As such, they are not as valuable financially to institutions as full associate degrees. To encourage students to aim higher (i.e., to reap more of the long-term benefits of college), this study institution may unknowingly direct students toward the associate degree and away from these credentials. Alternatively, the smaller nature of these credentials may attract students who are already unclear regarding their future vocation. As mentioned earlier, there may be more variability in these students whose indecision leads to less enrollment.

The results of a student's academic goals or aspirations can also be viewed through Iloh's (2018) contextual theory. While the study did not identify what information a student received about the various programs or degrees found at the study institution, it is likely that the decision of a major or degree focus is directly related to the information a

student received. If a potential student interacted with a faculty member or academic counselor, it could be inferred that a student would be more likely to enroll. Conversely, a student who did not engage in these interactions may be less likely. Further consideration of the information received by non-enrolling students would be beneficial to the institution to identify areas of weakness and potential growth.

Socioeconomic Variables

Expected Family Contribution (EFC). One of the unique aspects of this data set was the inclusion of financial aid data. Having granular information about enrolling and non-enrolling students and their financial status was critical to understanding how students make decisions. While this variable is primarily a measure of socioeconomic status, it also provides insight into the home life of students considering this variable incorporates sources of family income as well.

One of the more striking aspects of the data set was the number of students for whom the EFC was \$0. Over 42% of the students in the data set had an EFC of \$0 meaning that, based on several factors around their income, the amount of need-based financial aid the student could receive would be higher than someone who had an EFC of \$3,000. This is a rather sizable number of students which speaks to the financial challenges that many students face when going to community college. While college is often viewed as an investment for students that will pay significant returns over the life of the student, the initial decision to (likely) borrow money is one that can be difficult for many students.

Because of the large number of students that had an EFC of \$0, the logistic regression for Models 3 and 5 was skewed and as such, the model did not behave

correctly. While a log transformation was appropriate to fix the skewness to run the model, an interpretation based on this transformation is more difficult to establish. Since the slope was positive with an odds ratio above 1, it can be said that those with a higher EFC have a higher odds of enrollment. In an effort to come up with a more interpretable odds ratio, Model 3 was rerun with both EFC and Student Earnings as dichotomous variables (0 = \$0; 1 = Anything not \$0). The results showed a significant statistic ($p < .001$) with those having an EFC above \$0 being more likely to enroll than those who had an EFC of \$0 while controlling for other variables.

Both results confirm the reality of cost as an important variable within college decision-making. This study reinforces much of what is known about the type of student that considers community college, particularly in how they are more likely to come from lower socioeconomic means. These students may also be more volatile in their decision-making because they lack support from their family to pursue a post-secondary degree. Parental involvement and their knowledge of college-going information often improves the odds that a student will enroll in college (Perna, 2000, 2006). Iloh (2018) would acknowledge the reality that students from lower socioeconomic means have less opportunity to pursue a higher education degree.

Student Earnings. Student earnings are like the EFC in that they both provide a snapshot of the amount of money available to a student. While EFC incorporates family financial considerations, student earnings are directly related to the income made by the student. Thus, one could consider this variable as a proxy for whether a student is working while considering college or whether they would rely on financial aid or other outside resources to make ends meet while attending college.

Like EFC, a significant number of students did not have any earnings based on their FAFSA data. Over 43% of students indicated that they had no individual income. Because of this, the data was skewed like the EFC variable. After a log transformation, the results indicated that as students made more money, they were less likely to enroll. The researcher also evaluated Model 3 with student earnings as a dichotomous variable (0 = \$0 earned; 1 = anything above \$0). These findings showed that this variable was statistically significant ($p = .041$) with students earning money less likely to enroll than their non-earning counterparts.

Initially, this result may seem counterintuitive, at least from a socioeconomic perspective. If a student is earning money, it would be expected that the student would be able to afford college and might be more inclined to attend. However, this is not what was found from either the log transformed model or the dichotomous model. Students earning money are less likely to enroll.

One possible explanation for this may directly relate to Iloh's (2018) contexts of time and opportunity. Students who are earning money simply have less time and less opportunity to engage in academic studies than those who are not working. While this could be out of necessity, it could also be by choice. Regardless of the reason, employment is most important, effectively relegating higher education to second-tier status. While the desire may be there to attend college, life factors become barriers to that goal.

The results of the student earnings variable also are connected to the results of the age variable. The Pearson correlation between these two variables is 0.551 ($p < .001$) indicating a moderate correlation. As potential students grew older, they were less likely

to enroll. Similarly, it is thought that as students age, they are more likely to either support a family or at minimum, support themselves, resulting in them being less likely to attend college. Thus, the negative slope found in these variables provides evidence that enrolling in college is less certain as potential students balance various life circumstances.

Familial Variables

Military Status. There has been an increase over the past decade to support the unique needs and skills of service members. Various designations of military-friendly colleges are sources of pride for many institutions, including the one in the present study. This often involves increased attention to the enrollment needs of these students. While not statistically significant, the general direction from the slope indicates that military-connected students are more likely to enroll than their non-military counterparts. This confirms the institutional work that has been done in this area. While most of the sample population was not connected with the military (over 90%), those that are connected appear to be enrolling at a higher rate within the context of this community college.

Dependency Status. This variable may be one of the most important findings of this study. Coming from the Free Application for Federal Student Aid (FAFSA), this variable indicates how potential students are classified for tax purposes. Those that are classified as dependent are much more likely to be living at home or at least, more financially dependent on a parent or relative. Those that are classified as independent are often living on their own or must work to support themselves or their family. In the present data set, though, this variable provides insight into how age and life experience may influence the enrollment choices of college-going students. All the dependent

students are under age 24 – traditional college age – while the independent students range from 17 to 67.

The results from Models 4 and 5 showed that the odds that independent students would enroll decreased by a factor of 0.606 compared to their dependent counterparts. This is not an insignificant amount and speaks to the challenges and barriers that (mostly) older students face when deciding whether to enroll or not enroll in college. Iloh's (2018) model, namely the parts about time and opportunity, are important to consider based on these results. Independent students, generally, have more responsibilities. They may have to work. They may have children to care for. This may contribute to a tighter financial picture or higher mental taxation to deal with the various stresses of life. Whatever the case, the amount of time that independent students have is likely less than that of dependents. For whatever reason, these barriers are much greater for independent students than dependent students.

Dependency status is not a variable that is often used in research studies. However, its inclusion in the present study provides evidence that perhaps its inclusion should be more widespread, particularly absent of a detailed understanding of a student's home life or parental influence. Without engaging in qualitative research to understand reasons for enrollment/non-enrollment, this variable provides a window into the family connections of a potential student.

Marital Status. Even though this variable was not statistically significant, it was interesting to consider that married people are slightly more likely to enroll than non-married or other status students. On one hand, this goes against the dependency status variable considering that married students are all independent in this sample. Based on

those results, it would be expected that married people would be less likely to enroll. On the other hand, though, it could be that married people enrolling in community college are motivated, focused, and intentional. They may have a clear direction in pursuing their educational goals and are more likely to follow through on their application and enroll. Whatever the reason, considering this variable provides an additional layer of understanding of student enrollment patterns.

Findings from Models

The design of the five models used in this study corresponded with the variables that were used to measure various aspects of college choice. Each model included one of the four overarching categories – demographic, academic, socioeconomic, and familial – with demographics being included in each of the models due to its consistent status. The results from the models provide confirmation that each of the included variables can explain some of the variance within the construct. Of note is the fact that Models 2, 3, and 4 all had similar chi-square values and pseudo-effect sizes. This was remarkable only from the standpoint that none of the variables in each of these models stood out as being significant more important than another.

Model 5, the final model that included all the variables, had, as expected, the highest chi-square value since it had the highest number of variables included. Additionally, the Nagelkerke pseudo-effect size for this model was found to be .120. While these numbers are relatively high within the broader social science field, they indicate that much is still unknown within the college choice arena. Much more work still needs to occur to grasp how students make college decisions.

Implications for Practice and Leadership

This study incorporated variables that have been shown to be significant in the college choice and decision-making literature. Utilizing a logistic regression, the study provided findings that can be helpful, but these findings are limited. Indeed, the translation of these results into actionable items is at the heart of this research, particularly considering the contextual factors at play within the decision-making process (see Iloh, 2018). The rest of this chapter considers the implications for the community colleges at the local, state, and national level and for leaders within the broader higher education sector.

Implications for the Community College

Perna (2006), Iloh (2018), and others, in their theories of college choice, advocated for research that considers students and institutions in the context of their environment. Thus, there are implications that are directly related to the community college involved in this study and their specific situation. However, it would be prudent of all higher education professionals to consider these implications beyond just this institution.

Targeted Messaging and Contact

Various studies have demonstrated the importance of targeted and specific messaging to potential students. As Iloh (2018) and Perna (2006) both noted, the information that students know about college varies greatly. Communication about the benefits of college more broadly in addition to the specific programs offered by the college is key to improving enrollment. Working to connect with students via text messaging, social media, and/or in-person is important.

Specific to this community college, there are a number of possible ways to improve

communication during the post-application time period including: 1) the addition of specialized enrollment staff that are trained to address the specific needs of individuals; 2) taking the time to listen to each student's story to hear the barriers they face and working to mitigate these barriers on an individual basis; and 3) developing a system of regular touchpoints to ensure students are progressing towards enrollment.

Focus on Non-Enrollees

There were 454 non-enrollees included in this study. Every single one of these potential students progressed at least partway down the path toward enrollment in the college because they completed the FAFSA form. Once the semester starts, the question of why should continually be asked. Why did these students not enroll and attend? Was the reason something that was controllable from an institutional standpoint (i.e., enrollment process, financial need, etc.) or some other life event outside of control? To get to these answers, contacting the student through multiple methods is important to identify specific ways that the institution can improve for the future. Additionally, the follow-up on these students in subsequent semesters to inquire regarding their possible future enrollment is an area that is ripe for significant growth.

Career Studies Certificates (CSC)

One of the more surprising findings was that students enrolled in career studies certificates (CSC) were far less likely to enroll than new students. This was surprising for two reasons. First, the strategic plan for the entire Virginia Community College System (2015) was focused on improving credentials during the time of this study. The single goal of the plan was to triple the number of credentials awarded, including both associates degrees and CSCs. Thus, because CSCs take less credits to earn than the full

associate degree, it would be expected that the college would want to boost these numbers and encourage more people to pursue these degrees. That simply is not the case. While the college improved its credential output overall, those students considering only the CSC did not enroll, potentially reducing the number of credentials awarded should they have finished the program.

Second, the VCCS has secured legislative funding to help low- and middle-income students earn stackable credentials (i.e., certificates). Entitled G3, the program focuses on five high-demand career fields and provides help to students desiring a career in those fields (Babb, 2021a). With this additional funding, the expectation is that more students will seek out these smaller credentials. It would be in the best interest of the college to provide additional attention to the students seeking these credentials and assist them through the enrollment process. Not only will this benefit the students with improved income odds and job prospects, but the college will be viewed favorably from a political standpoint because of how they are enrolling and training the Commonwealth's work force.

Implications for Community Colleges in the State of Virginia

Application Information

The Virginia Community College System (VCCS) utilizes a shared application for each of its 23 community colleges. This system was reimagined and implemented in 2018, prior to the data from this study being collected. While it is believed that great care was taken in updating the application to include only vital and important information, continuous consideration should be made regarding how to improve and reduce barriers that students may experience in completing the application. Further, additional

considerations should be made on how both individual institutions and the entire system can utilize the collected information to make data-informed decisions regarding enrollment. Like the present study, utilizing application information to run basic regression analyses can be highly informational in identifying potential blind spots and motivating specific and targeted recruitment.

Readmitted Students

This paper has documented the challenges and hardships that students face on their path to college. While some students go through the traditional Hossler and Gallagher (1987) three-step model, most start, change course, drop out, and/or make multiple decisions on their college-going experience. This study's findings on readmitted students illustrates the contextual challenges that students face. A sizable portion of students come back to the community college after some time (at least 3 consecutive semesters) away. More so, once they decide to come back, they are more likely to make it through the enrollment process than new students. To this researcher, this is a classic illustration of grit, perseverance, and sticking with it. It may not be conventional in the Hossler and Gallagher sense, but for these students, their desire to pursue something better is noteworthy.

From a college perspective, these students are often viewed in a negative perspective. They tried community college and it did not work and therefore, they failed. This attitude, though, does not benefit the student nor does it benefit the college. Instead, these students should be celebrated for deciding to continue their education and trying college a second, third, or fourth time. They saw some value from their first experience and with some additional life perspective, seemingly have a clearer focus on college

attendance.

This finding, though, may be most important for state higher education policy developers and legislators. Incorporating metrics into the funding of community colleges can provide value through oversight. Often, though, incomplete, or worse, inaccurate metrics are used in these funding models. For example, a common metric is whether a student earned a credential or not. If they did not, the college is penalized. A college (and the student) can do everything right and if the student needs to drop out for personal reasons, the college is penalized. Tracking individual drop-out reasons would benefit the college in the future when pursuing the student to re-enroll. Additionally, this data would provide more accurate information into how well the college is actually doing on things it can control.

Not all students enter the decision-making process from the same starting point. Some need to explore multiple career options. Others need life experience to find a vocation. COVID has not helped as students consider gap years and delaying college. Thus, a deeper consideration of the value of readmitted students and their unique needs should be a significant focus of higher education enrollment leaders.

Implications for Community Colleges Nationally

Enrollment Processes

The enrollment process varies from institution to institution. A recent communication from the Virginia Community College System (VCCS) indicated as much within their system (Babb, 2021b). With most public community colleges open-enrolled institutions, getting students to move past the application to actual matriculation is one of the key aspects within the enrollment process. Barriers, though, often impede

the process, including some that come from the institutional on-boarding process. This may involve “requirements” like meeting with an advisor, providing transcripts from previous higher education experiences, or attending an in-person orientation. Some of these actions (transcript paperwork or establishing residency) are mandated by the state and are necessary for placement considerations. Other actions (meeting with an advisor) may not directly affect whether a student can enroll, but the information provided would likely benefit the student in understanding the enrollment process and creating an action plan for next steps. Finally, other activities (attending an in-person orientation), may be nice, but are not necessary for student enrollment. Considering the entire process from start to end should be undertaken regularly to identify pain points and potential areas for improvement.

COVID

This study considered students who applied to community college between the Summer of 2018 and Spring of 2020. COVID, while existent from late 2019, did not affect the daily lives of most people until the middle of March 2020. While there were likely a few late applicants from March or April 2020 at the community college in this study, most applicants applied by January 2020. Thus, COVID did not have a direct impact on this study.

Despite this study not including COVID data, the effects of COVID on higher education institutions are significant, particularly regarding enrollment. Various reports have shown that enrollment is down for all types of institutions (Nadworny, 2021). Community colleges were especially hard hit as applications and enrollment dropped during the Fall 2020 semester by over 10% (Agrawal, 2020; Nadworny, 2020; National

Student Clearinghouse Research Center, 2020). For many institutions, this loss of enrollment is having a direct impact on their financial picture. Enrollment translates to dollars and lack of enrollment means less dollars. Those schools who were already struggling financially are more likely to continue struggling. In essence, COVID has accelerated the problems that were already there. Therefore, despite this study not being directly about COVID, the findings from it are more important than ever as enrollment, or lack thereof, continues to be a significant area of concern for many institutions.

Considering enrollment data on a localized level is even more important post-COVID as decision-making for students has been interrupted by the pandemic. Models built to predict enrollment prior to COVID are no longer accurate and new models need to be created that project the reality of the present (and future) situation. Finding ways to incorporate the nuanced information advocated throughout this paper will go a long way in helping colleges weather the effects of the pandemic.

Customer Service and Personalization

Students are emoting, feeling humans. This is such a simple statement, but one that is important in how enrollment staff consider each student that applies. No one wants to feel like a bother or even worse, non-existent. These feelings can happen to potential students if the customer service provided by enrollment staff is less than ideal. Whether a student comes to the college to ask for help and connects with an employee or enrollment staff work process application information behind the scenes, it is important for enrollment staff to consider the human element.

This is even more important to consider in the context of how students get to the point where they consider college. As noted throughout this study, the path that leads to a

community college is often individual in nature and usually not direct. Students have concerns and needs that are unique to them and their situation. Thus, community colleges should consider how they might care for these students and help them realize the benefits they will receive from community college enrollment.

Admittedly, this takes a lot of work. Staffing is a primary expense for community colleges that seek to do more with less and enrollment can be a place where staffing is stretched. While trying to get to the next student or meeting, employees can rush conversations and leave students confused, diminished, or not important. Ensuring, though, that each touchpoint with a potential student is one where the student feels valued and not just another number is a key action that can potentially have significant impact (EAB, 2017). Relatedly, intentional connections through text messaging, phone calls, or even house visits, can provide a personal touch that lets students know they are desired and that the college cares about them.

Implications for Leadership

This study's primary focus was on the decision-making of students in considering college attendance. A secondary focus, though, considered how the expansive study of leadership connected to the college choice literature. Indeed, the parallels between college choice theory and leadership theory strongly resonate in the results of this study. With the results of this study, there are clear implications for leaders regarding their institutional leadership and policymaking and how the decisions that they make can have profound and long-lasting effects on the students they claim to serve.

Transactional Leadership

Colleges have served students primarily through the transactional leadership model

identified by Bass (1985) and Burns (1978). Colleges, as the leader, provide explicit expectations for students, the followers, on how to finish various educational tasks, or more specific to this study, what they need to do to enroll in college. In return for completing the requirements, students earn rewards in the form of the ability to take credits toward a degree. When students do not complete the enrollment requirements, punishment is given through higher costs, additional steps, or simply not being able to attend classes. These exchanges are by far the primary way in which the collegiate experience occurs. Transactional leadership, which is still common in both practice and the literature, is often portrayed in a negative light when compared with newer forms of leadership like transformational leadership (Day & Antonakis, 2012). Transformational leadership focuses on leaders engaging followers through inspiration, collaboration, trust, and bringing out the best in people. This leadership style particularly focuses on responding to change quickly (Basham, 2010).

Thinking to the future, what would it look like if colleges, particularly community colleges, moved from a transactional model of enrollment to a transformational model that focused heavily on being responsive to changes in student needs? What if students could enroll with minimal effort or try college with minimal consequences to develop the trust necessary for success? Students would benefit in multiple ways, including reduced paperwork, while colleges could increase the touchpoints necessary to develop student trust and enthusiasm toward the collegiate experience. Higher education is known for the slow way in which change occurs and yet, developing systems and processes that can respond to student needs would benefit colleges and students alike. Considering contemporary theoretical approaches, espoused through contextual leadership (Fiedler,

1978) and college choice (Iloh, 2018; Perna, 2006) instead of rigid theories like Hossler and Gallagher (1987), can offer alternative perspectives that are more flexible and appropriate in describing the decisions of leaders and students.

Institutional Leadership

Higher education leadership does not exist in a vacuum. Indeed, leaders of both the college as a whole and individual departments make decisions that have significant effects on employees and students. The ramifications of these decisions can have far-reaching consequences. Thus, it is imperative that leaders be conscientious of the needs of the people they are leading.

This study spent a significant amount of space advocating for a contextual understanding of how students make decisions around college. Perna (2006) and Iloh (2018) were the primary drivers of contextual viewpoints with Iloh's theory of time, information, and opportunity being a strong anchor. The results clearly showed that certain groups (women, Blacks, Hispanics, older adults among others) applying to the community college in this study may need additional support in the enrollment process. With this data, institutional leadership can make much more targeted changes to address these needs. Some potential ways that could be implemented include: 1) Developing specific outreach programs focused on low-enrolling student groups; 2) Continuing this research study by talking to non-enrollees to identify further reasons for non-enrollment (i.e., pursuing qualitative research); 3) Highlighting the value of stackable credentials like career studies certificates to boost enrollment.

The context of making decisions is even more important because of the role that community colleges play within their community. With the local economy often relying

on these colleges to train the local workforce, institutional leaders must consider the context of their location when making decisions. These leaders not only must develop outward connections with community and workforce leaders, but also downward in their decision-making and leadership internally. Utilizing specific information that is drawn from the institution that clearly shows trends is far more useful than broad studies or contextual research at like-minded institutions. Developing a data-informed posture with key stakeholders is a large part of the puzzle within enrollment management.

Political Leadership

In recent years, state and federal lawmakers have taken an expanded interest in the performance of public colleges. Various states have sought to tie funding to various metrics like semester-to-semester retention, amount of financial aid, and graduation rates. In some ways, considering these metrics provides a level of accountability to taxpayers who are providing some of the funding for public institutions. However, taking a rigid stance with these metrics and penalizing colleges for decisions beyond their control is both unfair to the college and dangerous for potential students. Pfeffer and Salancik (1978) noted this phenomenon within political organizations. While not specific to higher education, but broadly applicable, they describe organizations where decisions are applied across the board to all areas making them less adaptive and less flexible. In some ways, the goal of collegiate metrics has stifled innovation as institutions focus only on improving those metrics that will enhance their immediate funding instead of thinking about holistic ways to improve their culture (Muller, 2018).

As noted throughout this study, the decision-making of students is individualized. Students can begin, take a few classes, drop out for family reasons or lack of clear

direction, and then come back again at higher odds than newly admitted students as this study found with those students who were readmitted. Students, particularly those who are more likely to attend community college, don't always get it right initially. It may take multiple times to complete the "right" certificate or finish the degree. Yet every time a student drops out, it is a penalty against the institution in the form of reduced funding.

To offset this, colleges should be incentivized to help students, when the time and opportunity is right for them, re-enroll and complete a meaningful certificate or degree. Maintaining regular communication with the student after they leave to demonstrate the college's commitment to meeting the educational needs of the student should be a primary goal and acknowledged by funding agencies. This post-drop out attention to invite students back likely will result in increased enrollments but will also benefit the community by providing additional trained workers to meet the local workforce needs. Metrics that promote new ways of encouraging enrollment should be a point of emphasis from legislators and policymakers moving forward.

Data Leadership

One of the biggest challenges within higher education research is accessing usable data from primary stakeholders, often colleges and universities who have direct access to the data of potential students. Accreditation and federal requirements require institutions to have a person responsible for data, but their responsibilities are often diverse and leave little time for consideration for exploration beyond what must be done. This is particularly true for community colleges who, because of funding limitations, are caught in a cycle of having data, but lack the resources to pursue meaningful action with it. Further, attempts from outside researchers to acquire and work with this data are often

rebuffed due to lack of time or willingness. Thus, a large amount of collected data remains untouched within community colleges as limited resources are spread thin.

Institutional and system leaders need to consider the costs and benefits of utilizing data within their sphere of influence. Specific to enrollment, there are costs when someone does not make the choice to attend a particular college, often in unrealized personnel costs or inefficiencies in processing applications. Leaning into data considerations can minimize these costs and can be a way that separates good community colleges from great community colleges. Leaders who embrace this data mindset can break the cycle of underutilized data by making data accessible to others, hiring data analysts to uncover important trends, and targeting actionable items from the findings. While the costs of these resources at the outset are not insignificant, those who choose to pursue data-informed decision-making will be more likely to advocate for additional resources and be in a better position to serve the students in their area.

Implications for Theory

College choice theory largely began with Hossler and Gallagher (1987) and their three-step model detailing how students moved from consideration of college in middle school to the selection and attendance of a college post-high school. This theory largely ignored nontraditional students and those whose path to college was not as direct. During the early 21st century, Perna (2006), among others, considered different layers within the college choice literature leading, or at least paralleling, new ways of considering how students choose a college. Various studies (e.g., Acevedo-Gil, 2017) began to look at smaller subsets of college students to consider more situational contexts regarding college choice. Iloh (2018) continued this research with her model considering time,

information, and opportunity as three contexts that must be considered within the college choice and enrollment literature.

While the present research study is not proposing a new theoretical model, it does provide additional support that college decision-making is both complex and nuanced. Simple linear models are not sufficient in describing the varied experiences and environments that play a significant role in college choices. As an example, the finding that readmitted students are more likely to enroll than new students provides evidence that some students are not always successful during their first attempt at college. Some students start, drop out, come back again, stop, and maybe come back a third time before completing a degree. Linear theoretical models like Hossler and Gallagher (1987) cannot adequately capture this information. Thus, continued theoretical development that explores smaller groups will help to develop more insightful findings that will continue to enhance broad theoretical understanding.

Relatedly, the implications for leadership theory are important as well. This study provided evidence of a broad concern that community colleges have towards enrollment. With many institutions employing similar strategies in this sphere, there is considerable isomorphism within this space that causes higher education institutions to resemble one another (see DiMaggio & Powell, 1983). It could be, though, that those leaders who seek to challenge the status quo and seek new information and new strategies can separate themselves in the enrollment space. Leaders must be aware of and engaged with the various levels of “habitus” that Perna (2006) discussed in her important theory. Understanding the needs of individual students on a personal basis can help guide leaders to make decisions that will improve access. Embracing the nuances found in these spaces

will sharpen leaders in their understanding of their own context as they seek to broaden the educational experience to a more diverse population.

Implications for Future Research

The current study represents an attempt to provide meaningful insights regarding students who apply to a community college and their decision to enroll or not enroll. However, additional questions regarding several areas that this study touches on can lead to further research. First, this study focused on college choice and enrollment within a community college setting. As noted in the literature review, and specifically within Perna (2006), research about community colleges and enrollment is lacking when compared to four-year institutions. Any research that incorporates the community college as the primary point of focus will benefit the whole of higher education research.

Second, future research should dive deeper into the specific reasons that students consider and ultimately choose, or do not choose, community college. Qualitative research that involves focus groups or interviews with students could provide rich data that would provide further clarification to the results of this study. Third, consideration should be made for the students in this study who did not even complete the FAFSA. Due to the desire to include some financial aid data in this study, students who did not complete the FAFSA were removed from this study. Further research could and should explore these students as a separate group to understand their needs within the enrollment process.

From an institutional standpoint, additional research should explore the efficacy of interventions done by enrollment management staff. Do more students finish the enrollment process if they do or participate in a certain activity? What is the tipping point

where students who have already applied and filled out their FAFSA commit to the college and enroll? These questions could provide further evidence to support wholesale changes in the enrollment process or making tweaks that focus on maximizing student enrollment.

Lastly, contextual considerations were a significant part of the theoretical aspects of this study. This researcher advocates for continued exploration of the unique and many nuances found within the college choice literature. Institutional researchers would be wise to utilize their own research to investigate subpopulations or subgroups that struggle to move through the enrollment process. These considerations will go a long way to providing a more consistent and equal enrollment experience for all potential students.

Summary

The terms college choice, student decision-making, and enrollment management have enthralled higher education researchers for nearly 40 years. While much has been learned, much is still left to learn. This present study has attempted to explore one sliver of this world and provide contextual analysis that will benefit not only the institution in this study, but higher education policymakers and leaders. With research like this study, students will benefit from improved processes, increased attention, and hopefully a better enrollment experience that will set them up on the pathway to academic success.

With continuing budgetary challenges in higher education exacerbated by the COVID pandemic, every decision, particularly those that affect enrollment and/or retention, is significant. Leaders tasked with making improvements should incorporate as much data and information as possible in their decisions. By understanding the time, information, and opportunity contexts that are unique to their institution and local

environment, leaders will be better prepared to tackle the barriers that keep students from enrolling. This mindset shift will help institutions and the students they serve not only survive the many challenges facing community colleges but thrive as they continue to provide a professional education experience.

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