

CREDIT HOUR ENROLLMENT: DOES THE AMOUNT IMPACT COMMUNITY
COLLEGE ADULT LEARNER PERSISTENCE?

By

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ABSTRACT

State and national initiatives focused on meeting student completion goals have been established for higher education to help produce a stronger workforce and meet economic labor market demands. Some of these initiatives have been centered around improving adult learner enrollment and completion. More adult learners are returning to higher education and often seek advice from an academic advisor regarding suggestions for educational planning, including credit hour recommendations. However, research encompassing credit hour recommendations is often concentrated on those 18-24-year-old students who can enroll full-time.

This study aimed to investigate if credit hour enrollment impacts student persistence among adult learners enrolled in a two-year community college. Utilizing retrospective data provided by a two-year community college in Tennessee, chi-square analyses were performed to analyze of age, gender, race/ethnicity, and credit hour variables on student persistence. Although the results of the Cramer's V test indicated a weak association, all the variables resulted in being statistically significant indicators of persistence. Moreover, the weak association values indicate that there may be many additional factors related to student persistence, retention, and graduation that exist in addition to the variables used in this study.

Future research involving credit hour enrollment and adult learner persistence should include research designs with a qualitative approach or questionnaire that could help better understand credit hour enrollment decisions related to additional responsibilities that adult learners often encompass. Additionally, dedicated research on

adult learners should be continued so that higher education can better support them and their efforts in persistence and completion.

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CHAPTER I.

INTRODUCTION

Problem Statement

In 2009, during an economic recession, President Barack Obama challenged the United States to become the leader in postsecondary degree attainment during his speech to Congress. In his address, he acknowledged that...“three-quarters of the fastest-growing occupations require more than a high school diploma. And yet, just over half of our citizens have that level of education” (Obama, 2009, para. 62). Additionally, postsecondary degree attainment would help produce a stronger workforce to meet our economic labor market demands (Obama, 2009). President Obama’s speech set the stage for many higher education college completion initiatives at the state and national levels. As a result, more attention has been on completion rates than ever before.

Furthermore, adult learners are returning to higher education to retool for new jobs and acquire certifications and degrees needed to build a better life for themselves and their families. Research on student persistence in higher education has centered around traditionally aged 18-24 years old that typically attend full-time (Ellis, 2020a). Minimal research has been focused on adult learners designed around their needs as it relates to educational planning that leads to persistence and, most importantly, completion of a certificate or degree (Chen, 2017). This study will examine the relationship between course enrollment hours and adult learners’ persistence at a public 2-year community college.

National Completion Initiatives

President Obama's address in 2009 brought several critical changes within higher education, with completion being a vital issue. First, community colleges became a more focused avenue for students to obtain certificates and degrees to meet workforce needs (Mullin, 2010). Next, the College Completion Agenda was announced, setting a goal of 55 percent of adults ages 25 to 35 to obtain an associate degree or higher by 2025 (Hughes, 2012). This agenda provided a framework to assist in reform efforts at the state and institutional level focused on students, their needs, and meeting completion goals. Last, education reform groups such as Complete College America and Lumina Foundation collaborated with states and institutions to provide recommendations and solutions to enhance postsecondary education policies and procedures in achieving student success.

The postsecondary advocacy group Complete College America (CCA) has a mission to be “a bold national advocate for dramatically increasing college completion rates and closing institutional performance gaps by working with states, systems, institutions, and partners to scale highly effective structural reforms and promote policies that improve student success” (Complete College America, n.d., Mission section). Complete College America's alliance has grown in popularity from partnerships with eight states to over 44 states as of 2017 (Ness et al., 2021). CCA's “game changer” approach suggests including the following in student success initiatives at the institutional level: (1) performance funding, (2) remedial education, (3) recommend full-time enrollment by enrolling in 15 credit hours per semester, (4) offer schedules related to adult learner needs, (5) utilize guided pathways to completion (Ness et al., 2021).

Similarly, the Lumina Foundation is an organization that works to improve educational opportunities for all students at the postsecondary level. In addition to their commitment to improving educational attainment, their foundation provides grant funding opportunities to higher education institutions. The Lumina Foundation's mission is comparable to the advocacy that CCA provides in building relationships among state, systems, and institutional levels to improve outcomes. Both organizations share a mission on the urgent need to reach completion goals. These national organizations strive for innovative reform practices and understand the crucial need for the future of our workforce, economy, and country.

State Completion Initiatives

From the beginning, Tennessee has been a front-runner in implementing strategies in college completion efforts. In 2010, the General Assembly passed the Complete College Tennessee Act (CCTA), which redesigned the process by which institutions are awarded post-secondary funding. This change led to the nation's first outcomes-based performance funding model, Quality Assurance Funding (QAF) (Tennessee Higher Education Commission, n.d.). Next, the *Drive to 55* initiative was announced, which focused on meeting the goal of 55 percent of the population being awarded a degree–certificate or postsecondary–by 2025. Additionally, this initiative was established to help the needs of local and statewide workforce development. Tennessee lawmakers signed into law the Tennessee Reconnect Grant. This grant was established for those 25 years or older to complete a certificate or 2-year degree tuition-free (TN Reconnect, n.d.). With this opportunity, college access has increased the adult learner population within community colleges in Tennessee. Built on partnerships with the private sector,

nonprofit, and community leaders, Drive to 55's mission is to bring together higher education and workforce development to improve economic demands. Even with the introduction of these two initiatives, degree persistence and completion rates are falling short of the 55 percent attainment goal (Lumina Foundation, State Strategy Labs, n.d.).

Community College Completion Initiatives

For the past 12 years, Tennessee has partnered with Complete College America (CCA) to improve student pathways. Tennessee was one of the initial states to form their alliance. Community colleges use guided pathways to help students matriculate through the educational pipeline. In these pathways, one recommendation provided by CCA is enrolling in full-time semester schedules. This suggests that students participating in full-time enrollment of at least 15 hours would gain more significant momentum and complete college over those who take fewer credit hours each semester (Attewell et al., 2016). Unfortunately, many adult learners do not have that ability or option to take 15 credit hours when needing to maintain employment or care for a family. For adult learners to persist at higher levels, there must be a balance between the course load amount and the student's employment obligations outside class (Bergman et al., 2014). Students attempting too many courses could become overwhelmed quickly into the semester leading to withdrawing from courses and further impacting their persistence (Belfield et al., 2016). Alternatively, taking too few classes each semester could require additional time to complete a degree. Therefore, understanding the optimal number of courses an adult learner should enroll in that leads to persistence would be more beneficial to the institution than enrolling students and not retaining them for future semesters.

Community College and the Adult Learner

Community colleges became a central focus in the college completion agenda by helping more students complete credentials and obtain degrees (Mullins, 2010).

Community colleges provide shorter paths to degree completion and workforce training to assist in efforts to close labor shortage gaps (Lanford, 2021). Additionally, their open-access design offers the first two years of a liberal arts education to those who want to advance to the bachelor's level (Mullin, 2010). Community colleges offer cost-saving benefits that attract adult learners to their campuses to pursue their education efficiently (Juszkiewicz, 2020).

Retaining adult learners is a challenge among most community colleges across the United States. For adult students, maintaining persistence in college can be challenging as they frequently have periods of unpredictable enrollment patterns where there are semesters they can attend and others when life seems to get in the way (Crosta, 2014; Soares et al., 2017). Among the population of students enrolled in community college, 38 percent of them are adult learners (Lumina, 2019). These individuals enroll in community college for a variety of reasons. The most identified primary reason is to obtain the needed credentials to prosper in current employment or provide better lives for themselves and their families (Soares et al., 2017). According to the U.S. Department of Education National Center for Educational Statistics, one defining characteristic related to adult learners is enrollment at the part-time status (NCES, n.d.). The fall 2020 retention rate for part-time students was approximately 20 percent less than full-time students at 2-year institutions (NCES, n.d.).

New pathways designed at the national, state, and local levels are needed for adult learners to obtain degree attainment to improve our workforce and economic outlook. The more students receive a degree after graduating high school, the more economic development is produced at the national, state, and local levels. In a recent study from Georgetown University Center on Education and the Workforce, those who graduate college and then earn an associate degree average 25 percent more money in their lifetime than those not obtaining higher education after high school (Carnevale et al., 2021). Obtainment of an additional degree lowers student debt and produces more personal ownership improving social mobility (Chakrabarti et al., 2020).

As mentioned in this introduction, more recently, adult learners have increased within our higher education population. However, Soares et al., (2017) explain,

“Out of the 215 million Americans age 25 years or above, 29 percent (62 million) have a high school diploma or GED credential. Seventeen percent (36 million) have some college education but no degree. Of those with some college education but not degree, more than half (19 million) have spent two or more years in college” (p. 2).

These outcomes have brought forth a focus on adult learners to better understand them as a student and their pathways throughout college to keep them enrolled to completion (Gardner et al., 2021).

Statement of Purpose

In 2009 a greater focus on student completion was introduced to higher education. Shortly after, in 2010, Tennessee began introducing trailblazing initiatives to meet the completion goals set at the state and national levels. While there has been improvement,

Tennessee is falling short in degree completion. With the introduction of Tennessee Reconnect, the number of adult learners has increased in our community colleges. With this increase, there is a greater need for understanding them as students and the distinct differences they bring to the community college setting. Therefore, the purpose of this research study is to investigate if there is an association between persistence and student credit hour enrollment, age, gender, and race/ethnicity.

Research Questions

1. Is there an association between credit hour enrollment and persistence among community college students?
2. Is age associated with persistence among community college students?
3. Is gender associated with persistence among community college students?
4. Is race/ethnicity associated with persistence among community college students?

Research Hypotheses

H₁: Students enrolled in less than twelve credit hours is associated with persistence among community college.

H₂: Age is associated with persistence among community college students.

H₃: Gender is associated with persistence among community college students.

H₄: Race/Ethnicity is associated with persistence among community college students.

Definition of Terms

1. Academic momentum- The literature defines academic momentum as the speed at which a student accumulates course completion towards graduation. The more

courses taken in a given semester, the faster the student will complete college (Attewell & Monaghan, 2016)

2. Adult learner- Students 25 years or older (Bean & Metzner, 1985)
3. Complete College America (CCA)- National higher education nonprofit partnering with states to improve completion (CCA, n.d.)
4. Completion- For the purposes of this study, satisfying all requirements to receive a certificate or associates degree (THEC, 2020b)
5. Course load- Is defined as the number of courses a student enrolls in during a semester (Huntington-Klein & Gill, 2019)
6. Credit hour- Is defined as a unit of measurement used by the institution to indicate the achievement of a class that meets degree requirements. Each unit represents one class hour. For example, a three-credit course represents three hours of class time (Heffernan, 1973).
7. Early dropouts- In this study, students who enroll in one term but do not return to the same institution the following term (Crosta, 2013).
8. Educational attainment- Is defined as when a student graduates from postsecondary education with a certificate, associate's degree, or bachelor's degree (Drive to 55 Alliance, n.d.).
9. Environmental factors- Include variables outside of the college setting related to a student's life (Bean & Metzner, 1985).
10. Enrollment intensity- For the purposes of this study, enrollment intensity is defined as a student enrolling full-time or part-time (Lang, Ryu, & Shapiro, 2021).

11. Full-time enrollment- Enrolling in 12 or more credit hours per semester (NCES, 2022)
12. Lumina foundation- Independent foundation that partners with post-secondary institutions to improve access and increase completion (Lumina, n.d.)
13. Nontraditional student- For the purposes of this study, age will be the defining factor. Other factors include full-time employment, part-time student, financially independent, and single parent (NCES, n.d.)
14. Part-time enrollment- Enrolling in 12 credit hours or less per semester (NCES, 2022).
15. Persistence-For the purposes of this study, persistence is defined as enrolling in the fall semester and continually enrolling in the spring semester (Crosta, 2013).
16. Traditionally aged student- Student 18-24 years old (Ellis, 2020a).
17. Withdrawal- Students who do not persist and leave the college voluntarily (Bean & Covert, 1973).
18. Working-age adults- Students who are 24-64 years old (THEC, 2020b)

Limitations

There are approximately 1,400 community colleges in the United States (NCES, n.d.) The data collected in the study is derived from existing data requested from one community college in Tennessee. The results of this study will produce generalizable information, but it will not speak to all community colleges across the country.

The focused population in this study is adult learners based on their age (25 years or older). The results of this study may be different for other populations. Additionally, the only investigation was from an enrollment perspective. Other factors that contribute

to student persistence should be considered. Examples of these factors are level of course difficulty, withdrawal due to unforeseen events, and personal decisions to not continue enrollment.

Delimitations

There are multiple ways to define an adult learner (age, marital status, parenting role, & the number of employment hours). Prior research has shown no consistent definition when representing adult learners (Kasworm, 2014; Kasworm, 2018). However, for this study, age will be the defining variable in obtaining data on adult learners. Using age as the defining variable was decided upon as retrieving data on parenting roles and employment commitments would not be data regularly acquired by the institution.

The obtainment of a college degree is necessary to meet state and national completion goals. To meet the completion goals, the student must maintain persistence each semester until graduation. Community colleges enroll many students who are enrolled for various reasons that do not relate to the obtainment of a college degree. Additionally, community colleges enroll transient students who transfer completed coursework to their 4-year institution. Furthermore, these students leave the institution after only one or two semesters. As a result, this study will include only those students defined as degree-seeking by the community college.

CHAPTER II.

REVIEW OF LITERATURE

Introduction

The purpose of this review of literature is to examine relevant research related to adult learners' persistence and credit hour recommendations in the community college setting. This chapter provides an extensive review of the literature focusing on adult learners' characteristics, programs, and initiatives created to improve persistence, completion, credit hour recommendations, enrollment patterns, and enrollment intensity. This chapter begins by reviewing Bean and Metzner's (1985) Conceptual Model of Nontraditional Undergraduate Student Attrition and Bahr's (2013) deconstructive approach to understanding community college student pathways and outcomes as the foundation of this study. Next, this chapter will review the literature on adult learner persistence by focusing within the community college setting. Then, this chapter will review completion initiatives at the national and state levels concentrating on partnership advocacy groups, including The Council for Adult and Experiential Learning (CAEL), Complete College America (CCA), Lumina, and Tennessee Reconnect. After that, this chapter will examine the characteristics of adult learners, the various barriers they encounter, and their motivations for enrolling in higher education. Finally, this chapter examines enrollment intensity for adult learners by reviewing common credit hour recommendations, the use of guided pathways in the community college setting, and an Academic Advisor's role in helping adult learners make decisions on credit hour enrollment.

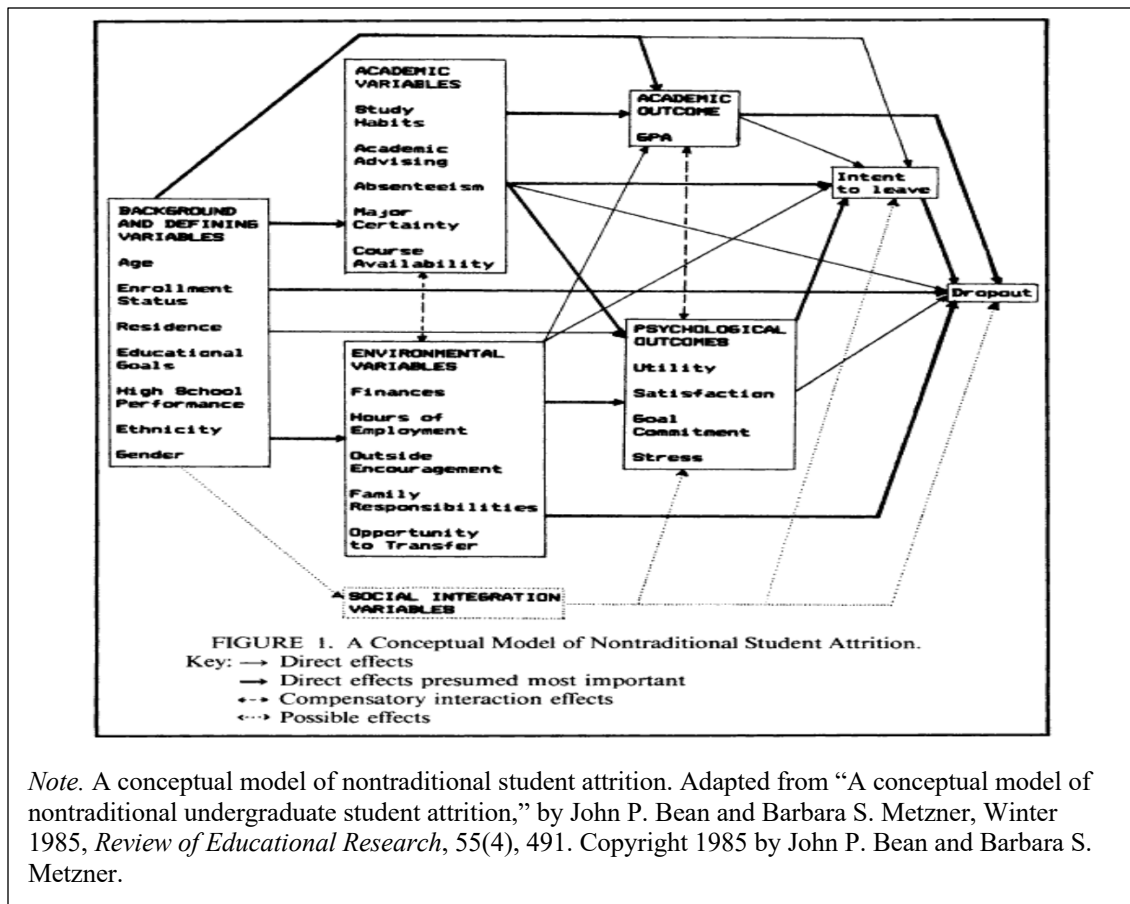
A Conceptual Model of Nontraditional Undergraduate Student Attrition

Research encompassing adult learners' degree completion indicates a negative relationship between these students' characteristics to higher education institutions (Kamer & Ishitani, 2021a). The commonly used characteristic throughout the research is students over the age of 25, attending part-time, and working while enrolled in college. Bean & Metzner (1985) are cited for creating a conceptual model for student persistence. The model builds on previous research on persistence, including Spady (1970), Tinto (1975), and Pascarella (1980), who designed their research around the notion that socialization on a college campus is an essential aspect of student persistence. The researchers suggest that adult learners lack the social integration that most traditional students encounter due to not living on a college campus.

Therefore, the model enhances the critical factors provided by previous researchers by including the external environment aspect in their model (Bean & Metzner, 1985). The researchers believe that the external environmental factors such as employment and family inhibit their ability to interact with institutional internal factors such as student peers and faculty. Generally, this model relies on the input of various variables that influence if a student will persist in college. Also, there are four components used in their path model that have an impact on if a student will persist. These include (1) academic performance, (2) intent to leave, (3) background and defining variables, and (4) environmental variables (Bean & Metzner, 1985).

Figure 1.

Bean and Metzner's (1985) A conceptual model of nontraditional student attrition



Note. A conceptual model of nontraditional student attrition. Adapted from “A conceptual model of nontraditional undergraduate student attrition,” by John P. Bean and Barbara S. Metzner, Winter 1985, *Review of Educational Research*, 55(4), 491. Copyright 1985 by John P. Bean and Barbara S. Metzner.

In addition, two “compensatory interaction” variables impact persistence for nontraditional students. This model is designed around the assumption “...that older students will have more family responsibilities, hours of employment, and higher levels of absenteeism than younger students” (Bean & Metzner, 1985, p. 494). Lastly, this model emphasizes that nontraditional students are impacted by external pressures that inhibit their ability to persist. Their external environment plays a crucial role in their ability to continue due to their responsibilities such as having adequate childcare, a supportive network of family or caregivers, and having support from an employer to attend college.

The Deconstructive Approach to Understanding Community College Student's Pathways and Outcomes

Bahr (2013) created a deconstructive approach to understand the pathways students take while enrolled in higher education and the outcomes related to the paths. In this approach, special attention is given to the institutional “policies and practices” within the community college that relate to a student’s pathway and how it impacts persistence (Bahr, 2013). Bahr expresses the need to understand student pathways and incorporate this thought process when reviewing policies and institutional practices within the community college setting. This approach is provided in this model as Bahr (2013) states,

Given how much we know about the associations between community college students’ characteristics and their outcomes, it is remarkable how little we know about the behavioral mechanisms—the pathways, course-taking behaviors, and enrollment patterns—that connect characteristics to outcomes. This sizable ‘blind spot’ constitutes a significant hindrance to our capacity to influence those outcomes (p. 150).

Bahr’s deconstructive approach aims to uncover “a proverbial black box” in understanding the student behavior related to student enrollment and adaptations needed within the higher education organizations to help them along the way and provide implications for institutional policy and practice (Bahr, 2013). This approach incorporates the use of transcript data to understand the “steps” the student encounters while progressing from the beginning to the end of their enrollment (i.e., graduation, transfer, etc.).

Chen & Hu (2019) completed research using both Bean & Metzner (1985) and Bahr's (2013) as the theoretical framework. In this study, the researchers investigated course-taking patterns related to community college students who were close to completing a credential or degree. The researchers found that full-time outside employment coupled with developmental coursework had a negative impact on student persistence in nontraditional students. Furthermore, students who have accumulated more than 45 credit hours while working full-time are more likely to complete their desired credentials despite the number of times they have repeated or withdrawn from coursework.

Promising Programs for Completion Initiatives

Across the United States, higher education advocacy groups have been established to support the improvement of degree completion outcomes. Nationally, organizations such as the Council for Adult and Experiential Learning (CAEL), Complete College America (CCA), and Lumina Foundation have been created as advocacy programs that offer recommendations related to reform initiatives to improve completion in postsecondary settings. For this study, the literature review will focus on these organizations as they all work with Tennessee to improve adult learner access, persistence, and completion. In addition, they each recognize the need for adult learner completion in reference to the economic health of our communities and have focused research encompassing those students' needs. Locally, Tennessee has established its own completion initiative program known as *Drive to 55*. This alliance is multifaceted and offers the TN Reconnect scholarship to improve degree attainment rates among adults in the state. Throughout the literature, Tennessee has gained national acknowledgment for

its approach to educational reform initiatives to improve postsecondary outcomes by developing a partnership with Complete College America and creating the Tennessee Reconnect scholarship (Meehan & Kent, 2020).

Council for Adult and Experiential Learning (CAEL)

The Council for Adult and Experiential Learning (CAEL) was established in 1974 to collaborate with the national, state, and local levels by providing “expertise, resources, and innovation” to provide equitable opportunity for adult learners and improve economic growth (Council for Adult and Experiential Learning, n.d., About Us section). CAEL utilizes several approaches to help institutions improve their programs and services to adult learners. CAEL’s *Adult learner 360* uses data to analyze by using parallel surveys for assessment and institutional effectiveness as it relates to serving adult learners as well as improvement recommendations for the institutions (Council for Adult and Experiential Learning, 2021). The Ten Principles for Effectively Serving Adults (Council for Adult and Experiential Learning, 2021),

1. Adaptivity
2. Financing
3. Outreach
4. Student Support Systems
5. Technology
6. Assessment of Learning Outcomes
7. Life & Career Planning
8. Strategic Partnership
9. Teaching-Learning Process

10. Transitions

The survey questions are created from CAEL's Ten Principles for Effectively Serving Adult Learners as a foundation for the post-survey report that provides a customizable evaluation of strengths and opportunities for institutional leaders for evaluation (Council for Adult and Experiential Learning, 2021).

Complete College America (CCA)

Complete College America (CCA) has become a national policy advocacy leader (Chan, 2022). Their alliance began in 2009 after the declaration made by President Obama earlier that year. Given its notable reputation of being a leader in postsecondary education reform, CCA's membership began in 2009 with eight states within its network and grew to more than 44 by 2017 (Ness et al., 2020). CCA has provided various initiatives to help leaders at the federal and state level dedicated to change reform to improve performance gaps among student populations (Ness et al., 2020).

In 2013, Complete College America launched *Game Changer*. This strategy was designed to improve college completion and close attainment gaps among defined student populations. States joined CCA by pledging to increase degree attainment and improve achievement gaps across their student population (Ness et al., 2020). This pledge consists of implementing five "game-changing strategies" consisting of (1) performance funding, (2) co-requisite course remediation, (3) *15 to Finish*, (4) structured student schedules, and (5) guided pathways (Jones, 2015). CCA believes incorporating these strategies at the institutional level will help improve student success and outcome goals (Jones, 2015).

Recognizing that students are not completing their degrees on time, Complete College America launched the *15 to Finish* campaign as part of their *Game Changer*

Initiative. This initiative encourages institutions to recommend that students enroll in 15 credit hours per semester or 30 credit hours per year, including summer terms (Chan, 2020). The premise behind this recommendation is that at-risk students will be more engaged and graduate in a timely manner (Chan, 2020). Approximately 450 higher education institutions have adopted the credit momentum recommendation (Chan, 2020). CCA suggests that institutions implement the advice of a minimum of 15 credit hours in their first year to have a higher graduation rate.

Additionally, CCA promotes that students of color and low-income students enrolled in 15 credit hours have higher completion outcomes (Chan, 2020). While some research has suggested that taking 15 credit hours per semester is beneficial (Belfield et al., 2016; Clovis & Chang, 2021; Huntington-Klein & Gill, 2021), other studies have provided evidence that students taking a course load of 15 hours while working more than 30 hours per week does not improve graduation rates (Attewell & Monaghan, 2016). CCA recognizes that not all students can enroll at the full-time rate. In their *Better Deal for Adult Learners*, CCA discusses that adult learners enroll part-time at a higher rate causing an increase in tuition over time and lower graduation rates (Ancel, 2018). To gain momentum at the part-time rate, CCA recommends that institutions build a smarter schedule consisting of shorter terms, fewer courses taken per term, and year-round enrollment. Next, they recommend using competency-based education and prior learning assessments such as CLEP exams, portfolios, and certificates. Last, they suggest that institutions have dedicated “coaches” focused on helping adult learners from start to finish with resources and recommendations needed to be successful students (Ancel, 2018).

Lumina Foundation

Lumina Foundation is a private foundation committed to providing opportunities to students beyond high school (Lumina Foundation, n.d.). Lumina was founded in 2000 and has become the largest philanthropy organization dedicated to college attainment goals across the United States. Lumina foundation partners with organizations from state, federal, private, and nonprofit sectors to bring educational reform to educational communities. Lumina Foundation has set a goal of 60 percent of working adults obtaining a postsecondary credential by 2025 (Lumina Foundation, n.d.).

Focusing on adult learners 25 to 64, Lumina Foundation created a tracking tool, *A Stronger Nation*, to assess degree attainment progress across the United States. Their interactive tool assesses national, metropolitan, state, and county metrics. In a recent report by the Lumina Foundation, *Stronger Nation*, 51.3 percent of working adults who are 25 to 64 have earned a degree or credential past their high school diploma (Lumina Foundation, 2020). Data reveals that nationally, educational attainment is increasing after high school with the addition of certificates earned as a metric for completion. While educational attainment has increased among adults, adult students in the Black, Hispanic, and Native American ethnic groups continue to have fewer graduates (Lumina Foundation, 2022).

Tennessee Reconnect

As part of the Drive to 55 initiative introduced by former Governor Bill Haslam, Tennessee Reconnect focuses on improving adult degree completion numbers across the state of Tennessee. The Tennessee Reconnect program provides the last dollar grant to adult learners once all other state and federal aid has been applied (Tennessee Reconnect,

n.d.). Students who use the funding, may pursue a technical certificate, technical degree, or associate degree at any public or private technical college, community college, or university offering the credentials (Tennessee Reconnect, n.d.). If the adult learner meets eligibility, they will receive up to five full-time or ten part-time semesters tuition-free towards the certificate or degree. Tennessee Reconnect requires that the student maintain enrollment throughout the fall and spring semesters to be eligible. Unfortunately, requirement can become a barrier for students as there are times when “life happens” and they are unable to maintain continuous enrollment and potentially become ineligible for the Tennessee Promise grant.

Promise programs across the United States have been utilized to lessen the student's financial burden due to tuition increases (Perna et al., 2017). With increases in tuition prices, low and middle-income students are borrowing high amounts of student loans to attend postsecondary education, causing a wider economic gap (Perna et al., 2017). To assist low and middle-income students with the opportunity to participate in college without hefty student loans, promise programs were created in hopes that students would be able to persist and complete a credential when the financial obligation is eliminated. Therefore, utilizing promise programs have become attractive to students as they are marketed to students as a free college for all that meet the eligibility requirements (Bell, 2020).

Community colleges have implemented transitional programs that offer student support guidance and services to new or returning adult learners as they begin their journey as a student. To understand more about the transition experiences of adult learners beginning or returning to college, Collom et al., (2021) conducted longitudinal

interviews with 23 recipients. The findings provided evidence that adult learners commonly enroll in the program due to needing a credential higher than a high school diploma to have career options with potentially higher earnings. Additionally, these individuals identified as first-generation or low-income who chose to work full-time over pursuing a credential earlier in life. As a result, Tennessee Reconnect provided a transition opportunity for these adult learners in providing financial support for these adults to return to college in hopes to improve their lives and a life for their families. While some students had the support systems and ability to adapt to change, others had to overcome challenging circumstances with transition due to limited support services and technology barriers.

A growing body of literature is questioning last-dollar scholarships and their structures for groups of students who traditionally face barriers in postsecondary education (Collom et al., 2021; Collom, 2022; Davidson et al., 2020; Bell, 2020). Additionally, there is minimal research on promise programs related to adult learners. Continuing research on the Tennessee Reconnect program outcomes, Collom (2022) used enrollment data provided by the Integrated Postsecondary Education Data System (IPEDS) to determine enrollment outcomes since the beginning of offering Tennessee Reconnect. Performing a difference-in-difference research design, the researcher found an increase in adult learners for academic years 2018 & 2019 with the introduction of Tennessee Reconnect, even though there was a decrease in the adult population enrolling nationwide (Collom, 2021). As a result of this study, the researcher recommends continued research on support services and institutional practices provided to adult learners and their impacts on persistence and retention.

Characteristics of Adult Learners

Defining Adult Learners

Defining an adult learner has been stated throughout various research as challenging given the unique differences in the adult learner student population (Kasworm 2014; Kasworm, 2018). Terminology regularly used to describe adult learners could relate to other groups of students that are not adult learners (Kasworm, 2014, Markle, 2015)—for example, using nontraditional as a term for describing an adult learner. Although adult learners meet the defining characteristics of nontraditional, this term encompasses multiple student characteristics such as living off campus or working while enrolled in college (Bowers & Bergman, 2016). Therefore, in current literature, the most common term used when referring to a student who is 25 years or older is using the term adult learner (Gardner et al., 2021). The U.S. Department of Education’s National Center for Educational Statistics (NCES) refers to adult learners as nontraditional students encompassing one of seven variables listed as the following: (1) delayed enrollment from high school, (2) attending college on a part-time basis, (3) financially independent, (4) full-time employee, (5) has dependents other than a spouse, (6) obtained a GED or (7) certificate (NCES, n.d.). With a variety of ways in which adult learners have been defined, Kasworm (2018) describes,

“For both program leaders and for researchers of adult undergraduate students, defining who and what characteristics the uniqueness of the adult undergraduate student has become a *stubborn and messy* problem in the literature, in collegiate services, and in research studies” (p. 78).

Therefore, this can negatively impact adult learners when policies, course design, and research related to them is inconsistent (Kasworm, 2018).

Provided the various ways to determine who is an adult learner, research has shown consistency in using age as a defining variable (Bergman et al., 2014; Chen 2017, Markle, 2015). The National Center for Educational Statistics (NCES) additionally suggests, “age acts as a surrogate variable that captures a large, heterogeneous population of adult students who often have family and work responsibilities as well as other life circumstances that can interfere with successful completion of educational objectives (National Center for Educational Statistics, n.d., para 1). As explained above, given the variety of ways adult learners are defined, age is the most used variable that captures both the internal and external barriers that students encounter as they enroll and persist through college.

Community College Adult Learner Enrollment

Literature suggests that adult learners often enroll at community colleges at higher rates than universities (Okun et al., 1990). To improve degree attainment while overcoming disparities and promote equity, state and national policies have been designed where students begin at a community college where they can transfer to a four-year institution (Shapiro et al., 2017). Community colleges are open-access institutions providing education to all students who enter their doors. To this end, community colleges have a total population of approximately 10 million students, half being reported as students 24 years or older (Community College Research Center, 2021). Of those adult students enrolled, 75 percent of them attend on a part-time basis. Additionally, the student population at the community college often has a higher percentage of first-

generation students as well as low-income and underrepresented minority groups (Community College Research Center, 2021). Adult learners often attend community college due to low tuition costs and short-term commitments to receiving a certificate or degree. Moreover, community colleges provide access to students who might not otherwise have a higher education nearby. In addition, it is also common for adult learners to utilize a community college as their gateway to a bachelor's program (Clovis & Chang, 2021).

Open enrollment at community colleges accepts students regardless of previous academic preparation. The population of students who need developmental or remedial education is often higher at the community college than at the four-year university (Monaghan & Attewell, 2015). Research suggests that enrolling in developmental coursework has been found to be beneficial for adult learners. In a recent study by Chen & Hu (2021), the researchers found that those students who were enrolled in developmental courses had higher persistence. Additionally, those with full-time jobs and who took developmental courses had higher levels of persistence (Chen & Hu, 2021).

Adult learners bring beneficial aspects to the student populations at community colleges. On the one hand, adult learners bring a wealth of knowledge from previous experiences and benefit the classroom by adding diversification among the student group (Chen, 2017). On the other hand, research indicates that they often outperform and take their coursework more seriously than their traditional-age students' classmates (Ellis, 2019a; Rabourn et al., 2018). To meet the goals placed before higher education, the need for adult learners to persist and complete is necessary. Throughout this literature review, research suggests the need for institutions to support these individuals differently from

traditionally aged classmates (Bergman et al., 2014; Chen, 2017; Gardner et al., 2021; Kasworm, 2018, Rabourn et al., 2018). Using 2013 and 2014 survey results from the National Survey of Student Engagement (NSSE), Rabourn et al., (2018) investigated current defining characteristics related to engagement and interactions of adult learners and how they connect to traditionally aged classmates and faculty. The researchers found that adult learners prefer online courses as they offer the flexibility, they desperately need providing their work and family responsibilities. Additionally, adult learners spend less time on campus, preventing their ability to connect with faculty and peers, but they were found to be successful in their pursuit of higher education.

Entry Characteristics and Adult Learner Persistence

Persistence is a common variable used in higher education to measure outcomes related to student success. The Community College Research Center (2021) defines the persistence momentum metric as the “rate at which students are retained from the first to the second term. This metric encourages colleges to examine why so many students stop out before the end of the first term and to implement practices that help students persist into the second term and beyond” (Community College Research Center, p. 2).

Throughout the literature, it is stated that adult learners have additional responsibilities that impact their ability to persist in college (Chen, 2017; Markle, 2015). In a qualitative study, Bellare et al., 2021) explored why adult learners return to postsecondary education and the obstacles they encounter being enrolled as students. The researchers also inquired about recommendations for improving the adult learner experience and student suggestions for improving persistence. Focus group interviews were performed with 23 participants from banking, healthcare, and manufacturing organizations. The researchers

discovered themes suggesting tuition cost and required time commitments were the most common barriers among the participants studied. Also, barriers associated with returning to college consisted of being technologically savvy, time commitments, balancing school and employment, and financial burdens placed on the student while enrolled. Motivations for enrollment included job change, eligibility for a higher position, or learning a new skill.

Prior research on adult learner persistence indicates that adult learners do not persist at the same levels as traditionally aged (i.e., 18-24) students (Miller, 2014). Contrary to this statement, Ellis (2019a) found a “conundrum” when researching the outcomes of an adult learner compared to traditional student performance in a single course rather than an entire degree program. The researcher found that even though they have more responsibilities taking up their time to be a student, they were often more dedicated to school. Performing a follow-up study, Ellis (2019b) found that nontraditional students outperformed traditionally aged peers with higher course engagement and motivation levels. These two studies provide evidence on adult learner persistence and the need for balance among the course enrollment (i.e., enrolled in fewer courses) as performing better academically.

Persistence related to Gender

Research on gender and persistence has indicated that women students persist more than men students (Juszkiewicz, 2020). Also, completion rates are more favorable for women than men. Using the U.S. Department of Education data on enrollment, graduation rates, and outcomes published by the National Student Clearinghouse,

Juszkiewicz (2020) reports that for the fall 2013 cohort, 44 percent of women completed a 2-year degree after six years, while 39 percent of men met in the same amount of time.

Prior research on adult learner persistence has suggested that the roles within the gender have an impact on a student's ability to dedicate time to their education. Markle (2015) explored the factors associated with nontraditional student persistence. The researcher examined quantitative variables among the students and completed qualitative interviews to gain greater insight into their thoughts related to persisting. Markle (2015) found that men considered withdrawing for financial reasons while women considered withdrawal when their “interrole” obligations were impacted. Women have interrole conflicts between parenting roles and student roles. Women reported having a much harder time persisting and often enrolled at a part-time status due to their responsibilities outside of school. However, they showed dedication and persisted in balancing all outside obligations. Markle (2015) found a difference in interrole results with men. Men have less interrole conflict because of the behavioral thoughts behind why men attend school “to invest in the family” while women enroll “for personal achievement” (p. 281). The researcher suggests further research on institutional structures supporting adult learners.

Persistence related to Race/Ethnicity

Community colleges have a diverse student population. In recent years, enrollment numbers for those 25 years and older have declined among all races and ethnicities (Brock & Slater, 2021). Community colleges are often a common entry point for Black and Hispanic students (CCRC, 2021). Reported for the 2018-2019 academic year, the community college student demographics were 6 percent Asian, 13 percent Black, 24 percent Latino, and 46 percent White (Community College Research Center,

2021). Among these diverse groups, historically wide attainment gaps directly impact these groups' economic outcomes (Brock & Slater, 2021). Roughly 42 percent of Black students, 58 percent of Hispanic students, and 50 percent of Native American students are not advancing to postsecondary education at any level (Brock & Slater, 2021).

The persistence of adult learners varies considerably based on race and ethnicity. In a study performed by Belfield et al. (2019), the researchers evaluated the incorporation of nine early momentum metrics during the first year of enrollment at three undisclosed community colleges across the country. In outcomes related to race and ethnicity, approximately two-fifths of Black and Hispanic students stay only one semester at community college. Reported statistics have continually stated that White and Asian groups have higher completion rates than Black and Latino groups. Research on race and ethnicity emphasizes that student populations at the community college indicate more underrepresented minority groups enrolled compared to the 4-year institutions. Within the last 20 years, the higher education community has focused on persistence and retention outcomes related to men of color (Welbeck & Torres, 2019). Men of color are those from Black and Hispanic backgrounds (Cabrera et al., 2021). To address the need for research on adult learners, Black males, Goings (2018) performed a qualitative study to learn more about social and academic educational experiences and decisions to enroll in postsecondary education. Interviewing 13 Black male nontraditional students, Goings learned about the student's experiences for returning to college. A common theme discovered in the research was that Black males re-enrolled despite failed attempts at being a student right after high school and decided to return to obtain a degree for better employment opportunities and “prove their doubters wrong” (p. 158). While the students

had support from faculty and staff, services dedicated to adult learners were lacking.

Goings suggests programmatic support for adult learner Black males so they can persist and concentrate on their academics.

Focusing research on Latina/o students, Carales (2020) examined background characteristics and environmental “pull” factors to predict persistence. Pull factors were defined as opportunities that pull students to school and away from school. Using data from the Beginning Postsecondary Students Longitudinal Study (BPS: 04/09, the researcher found that there was not one demographic characteristic that had an impact on persistence in the group of students. Students who were enrolled full-time had a medium level of academic integration, received a Pell Grant, had higher reported persistence, and were still enrolled after 6-years.

Historically, the achievement gap has been low among these minority groups. Therefore, a strong focus on improving completion rates of Black, Hispanic, and Native Americans has increased at the state and national levels as the need for more workers from these groups is increasing (Brock & Slater, 2021).

Adult Learner Motivations

An adult learner's motivation for enrolling in higher education does not differ from the reasons of their peers. Like their peers, they are working to obtain a degree to advance within their current career or transition to a new job. However, adult learners must factor in many external considerations such as full-time employment and family obligations when deciding to become a student. Enrollment is sometimes necessary if the adult learner has lost a job or needs the credential to improve their career outlook (Hardin, 2008). The most common motivations for adult learners are related to job

preparation and personal goals set forth by the student (Bellare et al., 2021). For example, a growing motivation is due to insecurity in current jobs in the “new economy.” Jobs in the new economy are moving from manufacturing to innovative, technologically used positions. Therefore, adult learners are returning to improve needed skills for current and future employment.

In a study to learn more about adult learners attending college in the new economy, Lanford (2021) examined the adult learning theory of andragogy while enrolled at an urban California community college. The researcher observed four writing and math sections focusing on interactions between adult students, faculty, course materials, and peers. After extensive time performing observation, the researcher used purposeful sampling to conduct interviews with 43 students. The researcher found that motivations for enrollment were to improve their current job situation and make themselves more marketable. Additionally, adult learners returned to set a positive example for their children, hoping they would follow in their footsteps.

Adult Learner Barriers

Motivations for attending post-secondary education often lead to overcoming barriers along the way for an adult learner. Extensive research has provided evidence that adult learners must overcome barriers to stay enrolled and persist as students (Bergman et al., 2014; Kasworm, 2018, Karmelita, 2020). The barriers students encounter are not always well defined as they are personal for each student (Karmelita, 2020). Adult learners have a wide range of added responsibilities that comes with being an older student in a stage of life where it is common to have a family and full-time employment. Typically added responsibilities are often childcare needs, work, family responsibilities,

and caregiving for an aging family member (Kasworm, 2018). These responsibilities can create barriers for some adult learners as they might be faced with choosing between participation in school or having to take a break to dedicate their time to responsibilities outside of the classroom.

Prior research has indicated that adult learners encounter three classifications of barriers when enrolling later in adulthood. Osam et al., (2018) suggest that students are impacted by institutional, situational, and dispositional barriers. First, an institutional barrier is factors within the institution that limits a student's ability to pursue education, such as institutional policies, admissions practices, and financial aid. Next, situational barriers are personal events the student might encounter, such as family responsibilities, employment conflict, and finances. Last, dispositional barriers are personal thoughts the adult learner processes on the ability to perform successfully as a student (Osam et al., 2018). Karmelita (2020) conducted a qualitative study with an adult learner transition prep program to investigate the support that adult learners feel they need to overcome barriers they encounter as a student. The researcher incorporated Cross's (1991) situational, institutional, and dispositional barrier categories when reviewing the barriers faced among the transition group. The researcher found that students who participated in the transition prep program experienced fewer barriers due to the connections they received from the faculty and staff supporting the program.

Adult learners lacking belongingness is mentioned often in the literature. It is suggested that adult learners feel like outsiders and lack common knowledge that traditional students often withhold (Karmelita, 2020). Lanford (2019) investigated the “outsiderness” that adult learners often experience. The study found that individuals

contemplate dropping out of school due to a lack of institutional knowledge and feeling as though they were not academically prepared to be a student. On top of not feeling as though they belong, adult learners often struggle with intrapersonal characteristics such as self-confidence and self-efficacy. In a study to examine student anxiety in math courses, Jameson and Fusco (2014) find that adult learners have a more negative self-perception that often leads to a barrier for some. Moreover, they find that as age increases, their level of anxiety increases, and efficacy decreases leading to less confidence compared to younger classmates (Jameson & Fusco, 2014, p. 314). Markle (2015) found that confidence and GPA impact a student's decision to persist or withdraw from courses for both men and women.

The ability to devote dedicated time to being a student is often a barrier for adult learners as many often work to support themselves through college. In a recent study analyzing results from the 2019 Community College Survey of Student Engagement (CCSSE) cohort, the Center for Community College Student Engagement found that 29 percent of the students worked more than 30 or more hours per week while enrolled in college. Most notably, 60 percent indicated that working full-time could cause them to withdraw from college. Additionally, part-time students were more likely to work more than 40 hours a week, and 62 percent indicated that their work schedule determines their enrollment intensity (Center for Community College Student Engagement, 2020). Students who work while enrolled have added pressure to perform at their employment and perform well in college coursework, leading to internal conflict between school and work (Bergman et al., 2014).

Many adult learners are parents (Sallee & Cox, 2019). Parental roles often influence an adult learner's ability to persist. Finding time to balance taking care of family members and completing coursework can impact the ability of an adult learner to persist and accumulate the credit needed to obtain a degree (Wladis et al., 2018). Women are affected by the oppression of time more than men due to their role-related responsibilities that create stress and the ability to persist (Markle, 2015). Wladis et al., 2018 performed a study to understand more about the differences in student performance outcomes as it relates to students who have preschool-aged children. Using time poverty as a conceptual framework, they posit that time poverty from being a parent impacts the ability to dedicate time to school and impacts persistence. The researchers found that students who had children younger than six years old had significantly less time to dedicate to their academics than those who had older or no children. Most importantly, the researchers found that dedicated childcare would significantly improve the opportunity for these parents to persist.

Credit Hour Recommendations

Over the past 20 years, a growing body of scholarship suggests that full-time enrollment contributes to persistence in community college students (Attewell & Monaghan, 2016; Belfield et al., 2016; Jenkins & Bailey, 2017). Research performed by the Center for Community College Engagement (2017) found that students participating in even one semester of full-time course work improved their persistence to the next year by completing gateway courses which led them to enrollment in their second year and eventually completion of a credential. However, Kamer & Ishitani (2021b) conducted a study using 2004-2009 Beginning Postsecondary (BPS) nontraditional student data to

investigate characteristics that impact a student to continue their education. Findings concluded that students who enrolled full-time were 2.5 times more likely to leave within the first semester enrolled.

Studies have investigated adult learner enrollment factors related to degree completion, with one theme being connected to the rate at which students complete their degrees. Breaking down the enrollment hours by a range, Okun et al., (1990) investigated if the credit load taken in a semester impacts a student's decision to continue at the community college for the next academic year. The researchers evaluated students enrolled in 1-6 credit hours, 7-12 credit hours, and 13 or more credit hours against variables such as age, the number of hours working, and time devoted to studying and decided to return the following semester. The researchers found that a student's credit load of 13 or more does impact if a student chooses to stay enrolled compared to those in 1-6 or 7-11 hours.

Academic Momentum

Clifford Adelman (1999/2006) introduced academic momentum to the higher education community by noting that the rate at which a student progresses through their educational journey impacts their chances of completion. In his seminal study, Clifford (1999) used student transcript data from the National Education Longitudinal Study (NELS) of 1988 and identified several forms of momentum-related characteristics. Clifford found that those who registered for at least full-term courses had more momentum and graduated, while those who registered part-time did not achieve graduation. Extensive research has explored the idea of academic momentum as it relates to student persistence and completion. The research on this topic suggests that academic

enrollment momentum at a higher rate (above 12 credit hours) predicts future student success (Belfield et al., 2016; & Davidson & Blankenship, 2017; Clovis & Chang, 2019; Huntington-Klein & Gill, 2021). For example, in a study dedicated to investigating academic momentum further, Attewell et al., (2012) used National Education Longitudinal Study of 1988 (NELS:88) data to explore how momentum impacts student persistence. Using propensity score matching, the researchers examined four variables related to momentum: the impact of delaying college from high school, part-time enrollment in the first semester, enrolling in 18 or more hours in the first semester, and summer term enrollment after the first academic year. The researchers found that students are eight percentage points less likely to obtain an associate degree when taking a gap between high school. In addition, those who enroll in less than 12 credit hours are between 8 to 13.2 percentage points less likely to earn an associate degree in 8.5 years.

To explore student enrollment patterns in a more inclusive capacity, Crosta (2013) examined student outcomes from five community colleges focusing on related to full-time and part-time enrollment patterns, completion rates at the 2-year institution, and transfer rates to 4-year institutions. Crosta (2013) found six different enrollment intensity patterns, (1) full-time persisters, (2) early leavers, (3) early persistent switchers, (4) mostly part-timers, (5) early attachers, and (6) later attachers. Most notably, students who begin as full-time often followed that path; however, 43 percent of the students switched between full-time and part-time intensity throughout the observed semesters. Additionally, students who enrolled in full-time intensity show higher results in persistence and completion than those who registered in part-time intensity.

Attewell & Monaghan (2016) studied student completion rates concerning the number of credit hours taken per semester. The researchers found that the number of credit hours that students enrolled in during their first semester as a student was an essential factor in their long-term success with persistence and completion. Most notably, students who enrolled in the manner from underrepresented backgrounds had increased success. As a result, the researchers recommend that institutional leaders and policymakers provide incentives and encourage enrollment in 15 credit hours as the norm for college students to graduate on time.

Various relationships within academic momentum have proven that students taking courses at a specific rate will complete at higher levels than those with lighter course loads. The momentum impacts their persistence and the idea that there is a balance between the number of courses students are taking that are too few or too many. Belfield, Jenkins, & Lahr (2016) provide a greater understanding of academic momentum impacts:

One potentially critical factor in students' likelihood of completing college is "momentum," defined in students' course loads when they start college. Students who lack momentum —those who initially take a light course load—fall behind immediately; if this pattern is compounded over several semesters, these students are unlikely to graduate. However, if students take too many courses in their first semester, they may be overwhelmed and consequently earn poor grades, become discouraged, and perhaps drop out at high rates. This suggests that there may be an optimal initial course load to maximize completion rates" (p. 1).

While taking full-time coursework is an option for some, not all students can enroll at the full-time rate. Attewell & Monaghan (2016) explain, "...older students, students who work more hours, and students who have dependents tend to enroll with fewer credits when they enter college. Thus, even among community college-goers, students with different initial credit loads differ by socio-economic status, academic preparation, and work/family obligations" (p. 13). Enrollment, especially for students from underrepresented backgrounds, often depends on if other factors in their life (i.e., working, families, unforeseen events) allow them to attend (Attewell & Monaghan, 2016). However, Chan (2022) found a minor increase in course momentum when analyzing the impact of the credit momentum policy where students are required to enroll in 15 credit hours. In addition, low-income and first-generation student populations provided higher rates of completion in comparison to all other student populations.

Reviewing the literature on credit hour recommendations, full-time enrollment is more repeatedly studied. Understanding the need for research dedicated to part-time student enrollment and outcomes, Ardissonne et al., (2021) explored the successes of students who were enrolled in a STEM program based on their enrollment status. The researchers divided the group into three categories, first-time students, attending courses in person, and attending online. The researchers identified that part-time students are as successful as those who are enrolled in coursework as full-time students. The researchers explain, "while full-time enrollment may be the best interest for some, it should be left to the student to enroll to the extent they feel best suits their needs, which are varied and complex, without feeling the undue pressure of compromising financial support" (p. 475).

Academic Advisors, Adult Learners, and Course Scheduling

Adult learners in transition to college benefit from advising sessions as they often need additional support and targeted information when enrolling (Hatch & Garcia, 2017; McKinney et al., 2022). Throughout this literature review, it has been stated that adult learners frequently enroll or reenroll in post-secondary education after a long break between high school and college (Bellare et al., 2021). The utilization of academic advisors has been stated to improve student success metrics in the community college setting (Bailey et al., 2015; O'Banion, 2019). Academic advisors have intentional conversations with students framed around exploring life goals, vocational goals, educational program choice, course choice conversations, and scheduling courses (O'Banion, 2019).

Community colleges have implemented guided pathways as a reform initiative to improve student success. Guided pathways are created with the end in mind by developing programs and services to students to create a more structured approach to a student's educational path (Jenkins, 2015). Guided pathways are designed to eliminate barriers that community college students have encountered, such as having too many course choices and program choices, unclear paths to degree attainment, understanding transfer, and the importance of completing developmental courses (Jenkins, 2015). Advisors implement principles within guided pathways to frame their conversations with students concerning educational planning, career planning, and transfer information (Jenkins et al., 2022). Jenkins et al., 2015 explain,

“The guided pathways perspective suggests that reforms to student services will be much more effective if they are implemented in concert with the development

of program maps that provide a default course of study that students can follow to achieve clearly specified end goals for further education and employment” (p. 213).

Community colleges implementing guided pathways provide their students with a clear semester-by-semester plan detailing all courses needed to obtain a credential or degree. Advisors use degree assessing technology to evaluate student credit and create individualized plans as they matriculate through their program of study, ensuring that students are taking the correct courses along the way (Jenkins, 2015).

Academic advisors provide insightful suggestions on course pairings and the number of courses a student should take to be successful. Planning a student's schedule and balancing responsibilities outside the classroom is key to persistence and completion (Karmelita, 2020). To investigate how community college students decide on the number of course hours they will enroll in, McKinney et al. (2022) performed interviews with students and academic advisors. The researchers found that decision to enroll in college depended upon the student's academic performance from the previous semester, financial considerations, and previous advising experiences. Additionally, the researchers note that while the advisors agreed that students should enroll in 15 credit hours to improve time to degree, they recognize that not all students can enroll in this load given their commitments outside the college. While selecting courses is a role advisors provide to students, they often do much more. O'Banion (2019) proclaims, “academic advising is the second most important function in the community college. If it is not conducted with the utmost efficiency and effectiveness, the most important function in the college —

instruction—will fail to achieve its purpose of ensuring that students succeed in navigating the curriculum to completion” (p. 1).

Chapter Summary

The United States needs more college graduates. As discussed throughout this literature review, national and state completion goals have been established to ensure that it is a top priority in the higher education sector. The creation of promise programs such as Tennessee Reconnect and partner organizations such as Complete College America and Lumina Foundation has been established to help institutions improve their rates. One recommendation often suggested by these promise programs is for institutions to encourage full-time enrollment intensity. Although research highlights the importance of taking at least 15 hours in the first year, adult learners often cannot enroll at that capacity and be successful. This gap in research related to credit hour enrollment with the adult learner in mind suggests an opportunity to gain more knowledge about this relationship. The information gained from this study will provide better guidance to the higher education sector as they create policies and programs with adult learners in mind.

CHAPTER III.

METHODOLOGY

Subjects

This longitudinal research study focused on adult learners in the community college setting. The researcher made all required formal requests for institutional data from the community college located in Tennessee. The data provided by the institution was analyzed using the IBM Statistical Package (SPSS) software version 28.0.0.0, and the statistical analyses were performed among the chosen variables. For this study, cohort years 2016-2017 through 2021-2022 were selected for use as they are the most recent six-year student information the institution could provide. A total of 13,164 students from six cohort years were identified for analysis.

Following the appropriate protocol in requesting data from the institution, the researcher submitted an exempt review application to MTSU's Institutional Review Board (IRB). Once approved, another request for IRB exempt review application was requested from the selected community college. This study did not require informed consent, disclosure, or confidentiality documentation as no identifiable personal information was used in the study.

Research Design

In this quantitative, retrospective study, credit hour enrollment was evaluated to predict if it influences adult student persistence. As mentioned by Christensen & Johnson (2020), "in retrospective research, the researcher typically starts with the dependent variable (i.e., with an observed result or outcome) and then "moves backward in time,"

locating information on variables that help explain individuals' current status on the dependent variable" (p. 387). Using a non-experimental approach, the researcher does not manipulate variables in the study. Instead, the researcher identifies "inferences about the relationships among the variables" within the study (Johnson & Christensen, 2020). A potential advantage to using this design is that it "can help focus on the study question, clarify the hypothesis, determine an appropriate sample size, and identify feasible issues for a prospective study" (Hess, 2004, p. 1171). In contrast, a potential disadvantage to using this design is that the researcher is not performing an experimental study and the evidence is not as strong. Therefore, the researcher should continuously remind themselves that this research will not "provide evidence for causality" (Johnson & Christensen, p. 369). Additionally, nonexperimental research is often referred to as being more exploratory and less confirmative research (Johnson & Christensen, 2020).

For this study, the researcher used existing or secondary institutional data from the community college. As described by Johnson & Christensen (2020), "existing data is "collected, recorded, or left behind at an earlier time, usually by a different person and often for an entirely different purpose than the current research purpose at hand" (p. 203). The researcher did not actively collect new original data and used data that the community college had already collected. The use of existing research has advantages and considerations given that it is data collected for different use. According to Doolan & Froelicher (2009):

Obvious advantages for secondary analysis are that the PI can answer questions in less time and with lower costs than when other research approaches. This

especially is true when answering the research questions require large numbers of subjects or following subjects over a long period of time (p. 205).

One important consideration when using existing data is that “for secondary analysis to be appropriate, the PI must have an important research question and a data set that is adequate to address the question” (Doolan & Froelicher, 2009, p. 205). If the data set is inappropriate, the researcher must change the research question to fit with the provided data.

In this study, the dependent variable was persistence, the independent variable was the number of credit hours enrolled, age, gender, and race/ethnicity. The subject's information in this study was converted into data by the researcher assigning a numerical value to each variable. As previously discussed in chapter two, enrolling in full-time enrollment is a challenge for adult learners given their additional responsibilities outside of college. Therefore, credit enrollment categories were created to analyze optimal enrollment hours based on adult learners' persistence. Students were categorized into three pre-determined groups consisting of 1-7 credit hour enrollment, 8-11 credit hour enrollment, and 12 or more credit hour enrollment. Those enrolled in 1-7 credit hours were assigned to a one, those enrolled in 8-11 credit hours were assigned to a two, and those enrolled in 12+ were assigned to a three for data analysis. These pre-determined credit hour groups were created based on prior research designs that used similar groupings when inquiring about the number of credit hours students were enrolled in during a given semester (Bergman et al., 2014; Okun et al., 1990). For this study, the researcher created the pre-determined groups based on capturing enrollment in part-time or full-time status. The 1-7 credit hour group would be considered the lower end of the

part-time status, typically consisting of one to two courses. The 8-11 credit hour group is mid to higher end of the part-time status, typically consisting of up to three courses, and the 12+ credit hours group is the full-time consisting of four or more courses.

The age variable was categorized into three groups, with those who were 25-30 years old, given a numerical value of one; those 31-35 years old, with a numerical value of two; and those 36 years old and above, a numerical value of three. For the gender variable, the data were categorized into two groups. Females were given a numerical value of one, and males were given a numerical value of zero. For the race/ethnicity variable, the data were categorized into four groups. White students were given a numerical value of zero, African American students were given a numerical value of one, Hispanic/Latinos students were given a numerical value of two, and students identified as all other races were given a numerical value of three for the analysis.

As stated in chapter two, the ability of an adult learner to maintain persistence semester after semester is a challenge, given their additional responsibilities. Adult students regularly have chaotic enrollment patterns where they enroll and unenroll at periods (Crosta, 2014). Using the data provided by the institution, the researcher assigned students a numerical value based on the provided data on the student's persistence. Students with a numerical value of one persisted to the next semester, and those students with a numerical value of two did not persist to the next semester. This information was then analyzed to determine if an association exists between student persistence and the enrollment group where students are most successful.

Analysis of the Data

To test the study's hypothesis, chi-square tests were performed to determine if there is an association between persistence and credit hours, age, gender, and race/ethnicity. Demographic information consisting of age, gender, and race/ethnicity has been found in the literature as having an impact on student persistence. In addition, the number of credit hours enrolled a student attempts each semester has been found in the literature as impacting a student's persistence (Adelman, 1999/2006; Attewell & Monaghan, 2016).

Chi-Square Test of Independence

The Chi-Square test is a commonly used nonparametric tests used to measure frequency in data (Franke et al., 2012). In this study several chi-square tests of independence were performed to evaluate if the two categorical variables in a single sample are associated with each other or not (Franke et al., 2012). This study utilizes the chi-square test of independence as it is “testing hypotheses when the variables are nominal” (McHugh, 2013, p. 143). Additionally, according to Field (2018), Chi-Square is “the statistic is based on the simple idea of comparing the frequencies you observe in certain categories to the frequencies you might expect to get in those categories by chance” (p. 838). With the selected dependent variable being persistence, the Chi-Square test was selected as persistence is a categorical variable. In this study, students either persisted or did not persist.

This study analyzed the contingency table output from SPSS. A contingency table is utilized in determining if the data within the table is statistically significant. A contingency table “displays information in cells formed by the intersection of two or

more categorical variables” (Johnson & Christensen, 2020, p. 494). The table consists of rows that represent one categorical variable and columns that represent the other categorical variable. Contingency tables can be beneficial in encompassing all kinds of information from frequencies to percentages. For purposes of this study, the contingency tables are containing frequency data for each of the comparing variables selected for the study.

In addition to performing the chi- square test, this study analyzed additional outputs from SPSS to measure the strength and effect size among the variables. The researcher implemented the commonly used, Cramer’s V test, to test the data’s strength association between the variables (Field, 2018). Although this test is most useful measure for association, a limitation of Cramer’s V is it can “produce relative low correlation measures, even for highly significant results” (McHugh, 2013, p. 143). Cramer’s *V* statistic has a maximum value of 1 and can be interpreted in relation to low, medium, and high level of strength among the two variables. Additionally, this study computed the odd’s ratio to measure the effect size. The odd’s ratio is used to “measure the ratio of the odds that an event or result will occur to the odds of the event not happening” (McHugh, 2009, p. 120-121). In this study, the odds ratio will be calculated for each research questions to determine an effect size among each group. The following formula is an example of the formula that was utilized in this study (Field, 2018):

$$\text{Odds persistence} = \frac{\text{yes persistence} / \text{number of students}}{\text{no persistence} / \text{number of students}}$$

To find the odds of persistence among each variable group, the researcher took the number of those who did not persist and dividing it by the total number of students in

each group. Then the researcher takes the number of those who did persist and divides it by the total number of students in that group. Finally, the researcher divided the total number of those who did not persist by those who did persist to find the odds ratio for that variable group. This calculation process was continued and performed for each of the groups among the variables. To find the odds ratio between the groups, the researcher performed the following calculation:

$$\text{Odds} = \frac{\text{Odds ratio results group 1}}{\text{Odds ratio results group 2}}$$

This calculation allowed the researcher to investigate the effect of the odds ratio among each of the groups to analyze differences among each group related to their persistence.

Chi-Square Assumptions

As stated above, chi-square is type of analysis used when determining if an association exists between two variables by comparing frequencies within the variables.

Therefore, the assumptions stated for this study consist of (Field, 2018):

- Each person, item, or entity must contribute to only one cell of the contingency table.
- All *Expected Counts* should be greater than 1 and no more than 20% of the expected counts should be less than 5.

Chapter Summary

This chapter described the methodology used for this study. The researcher utilized six years of retrospective data from the 2016-2017 academic year through 2021-2022 academic year from a two-year college in Tennessee. There was a total of 13,164 students from six cohort years who were identified for the analysis. The variables

selected for this study were age, gender, race/ethnicity, and credit hours. There was no collection of new data or manipulation of variables. The analysis chosen for the study was the chi-square test of independence to determine if there is a statistically significant association between each of the selected variables in the research questions. For each of the selected variables, the researcher will analyze the results of the contingency table, chi-square analysis, Cramer's V test, and perform odds ratio. The results of this analysis will be discussed in Chapter IV.

CHAPTER IV.

RESULTS

Introduction

Centered around an increased focus on student persistence and completion, this study aimed to investigate if there was an association among credit hour and persistence, age and persistence, gender and persistence, and race/ethnicity and persistence within the community college population. A dataset consisting of age, gender, race/ethnicity, credit hours, and persistence was requested by the researcher and provided by the community college. The community college organized the data by cohort years containing requested variable groups. Once the data was received from the community college, the researcher combined each cohort year's data into one dataset consisting of cohort years 2016-2017 through 2021-2022. The researcher performed a chi-square analysis with the provided data.

This chapter will present the statistical methods used on the dataset. It will begin by describing how the researcher transformed the received data in SPSS, and then present the outcomes of the use of the chi-square analysis on each selected variable.

Descriptive Statistics

Table 1 describes the demographic characteristics of the 13,164 adult students from the combined six cohorts who were enrolled during the fall academic terms of 2016 through 2021. The total number of participants in the study was ($n = 13164$). The data were categorized by age 25-30 ($n = 5333$), 31-35 ($n = 2612$), and 36+ ($n = 5219$), by gender, female ($n = 8848$) and male ($n = 4316$), and race/ethnicity, White ($n = 9904$),

African American ($n = 1622$), Hispanic/Latino ($n = 712$), and all other ($n = 926$), credit hour 1-7 ($n = 6153$), 8-11 ($n = 2607$), and 12+ ($n = 4366$).

Table 1

Demographic Characteristics of Participants that are Adult Learners Enrolled in the Fall to Spring Semester (N = 13164)

Characteristic	<i>n</i>	%
Age		
25-30	5333	40.5
31-35	2612	19.8
36+	5219	39.6
Total	13164	100
Gender		
Female	8848	67.2
Male	4316	32.8
Total	13164	100
Race/Ethnicity		
White	9904	75.2
African American	1622	12.3
Hispanic/Latino	712	5.4
All Other	926	7.0
Total	13164	100
Credit Hours		
1-7	6153	46.7
8-11	2607	19.8
12+	4366	33.2
Total	13164	100

Chi-Square Test of Independence Analysis

Table 2 presents the results of the contingency table used to understand the frequencies between credit hour enrollment and persistence variables. Since the contingency table met the chi-square test assumptions, as each subject contributed to one cell of the contingency table and there were no expected counts less than 5, the researcher continued to analyze the results of the chi-square tests to review the association between credit hours and persistence.

Table 3 and table 4 demonstrate that there was a significant association between enrolled credit hours and student persistence $X^2(1) = 142.086, p < .001$. *Cramer's V* = .104, $p < .001$ indicated that there was a very significant, but moderately weak association between the independent and dependent variables. The odds ratio showed the odds of students enrolled in 12 or more credit hours were 1.58 times more likely to persist than students enrolled in 1-7 credit hours and 1.07 times more likely to persist than students enrolled in 8-11 credit hours. The odds ratio also showed the odds of students enrolled in 8-11 credit hours were 1.48 times more likely to persist than students enrolled in 1-7 credit hours.

Table 2*Frequencies among Credit Hour Enrollment and Persistence*

			Persistence		
			No	Yes	Total
Credit Hours	1-7 Hours	Count	2491 _a	3662 _b	6153
		Expected Count	2167.1	3985.9	6153.0
		% within Hours	40.5%	59.5%	100.0%
		% within Persistence	53.9%	43.1%	46.9%
		% of Total	19.0%	27.9%	46.9%
		Standardized Residuals	7.0	-5.2	
	8-11 Hours	Count	828 _a	1815 _b	2643
		Expected Count	929.8	1713.2	2643.0
		% within Hours	31.5%	68.7%	100.0%
		% within Persistence	17.9%	21.3%	20.1%
		% of Total	6.3%	13.8%	20.1%
		Standardized Residuals	-3.3	2.5	
	12+ Hours	Count	1312 _a	3056 _b	4366
		Expected Count	1536.6	22831.4	4368.0
		% within Hours	30.0%	70.0%	100.0%
		% within Persistence	28.3%	35.8%	33.2%
		% of Total	10.0%	23.3%	33.3%
		Standardized Residuals	-5.7	4.2	
Total		Count	4631	8533	13164
		Expected Count	4631.0	8533.0	13126.0
		% within Hours	35.2%	64.8%	100.0%
		% within Persistence	100.0%	100.0%	100.0%
		% of Total	35.2%	64.8%	100.0%

Table 3*Chi-Square results of association among Credit Hours and Persistence*

	Value	df	Asymptotic Sig. (2-sided)	Exact Sig. (2- sided)	Exact Sig. (1- sided)	Point Probability
Pearson Chi-Square	143.788 ^a	2	.000	.000		
Likelihood Ratio	143.835	2	.000	.000		
Fisher's Exact Test	143.750			.000		
Linear-by-Linear Association	129.539 ^b	1	.000	.000	.000	.000
N of Valid Cases	13164					

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 929.79

b. The standardized statistic is 11.381

Table 4*Cramer's V results of association between Credit Hours and Persistence*

	Value	Approximate Significance	Exact Significance
Nominal by Nominal			
Cramer's V	.105	.000	.000
N of Valid Cases	13164		

Table 5 presents the results of the contingency table used to understand the frequencies between student age and persistence variables. Since the contingency table met the chi-square test assumptions, as each subject contributed to one cell of the

contingency table and there were no expected counts less than 5, the researcher continued to analyze the results of the chi-square tests to review the association between credit hours and persistence.

Table 6 and Table 7 demonstrate there was a significant association between age and student persistence $X^2(1) = 13.675, p < .001$. *Cramer's V* = .032, $p < .001$ indicated that there was a significant, but very weak association between the independent and dependent variables. The odds ratio showed the odds of student aged 36 or more years were 1.13 times more likely to persist than students aged 25-30. The odds ratio also showed the odds of students aged 31-35 were 1.02 times more likely to persist than students aged 36 or more years and 1.16 times more likely to persist than students aged 25-30.

Table 5*Frequencies among Age and Persistence*

		Persistence			
		No	Yes	Total	
Age	25-30	Count	1975 _a	3358 _b	5333
		Expected Count	1876.1	3456.9	5333.0
		% within Age	37.0%	63.0%	100.0%
		% within Persistence	42.6%	39.4%	40.5%
		% of Total	15.0%	25.5%	40.5%
		Standardized Residuals	7.0	-5.1	
	31-35	Count	878 _a	1734 _a	2612
		Expected Count	918.9	1693.1	2612.0
		% within Age	33.6%	66.4%	100.0%
		% within Persistence	19.0%	20.3%	19.8%
		% of Total	6.7%	13.2%	19.8%
		Standardized Residuals	-1.3	1.0	
	36 and older	Count	1778 _a	3441 _b	5216
		Expected Count	1836.0	3383.0	5219.0
		% within Age	34.1%	65.9%	100.0%
		% within Persistence	38.4%	40.3%	39.6%
		% of Total	13.5%	26.1%	39.6%
		Standardized Residuals	-1.4	1.0	
Total		Count	4631	8533	13164
		Expected Count	4631.0	8533.0	13164.0
		% within Age	35.2%	64.8%	100.0%
		% within Persistence	100.0%	100.0%	100.0%
		% of Total	35.2%	64.8%	100.0%
-					

Table 6*Chi-Square results of association among Age and Persistence*

	Value	df	Asymptotic Sig. (2-sided)	Exact Sig. (2- sided)	Exact Sig. (1- sided)	Point Probability
Pearson Chi-Square	13.675 ^a	2	.001	.001		
Likelihood Ratio	13.646	2	.001	.001		
Fisher's Exact Test	13.632			.001		
Linear-by-Linear Association	10.230 ^b	1	.001	.001	.001	.001
N of Valid Cases	13164					

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 918.88

b. The standardized statistic is 3.199

Table 7*Cramer's V results of association between Age and Persistence*

	Value	Approximate Significance	Exact Significance
Nominal by Nominal			
Cramer's <i>V</i>	.032	.001	.001
N of Valid Cases	13164		

Table 8 presents the results of the contingency table used to understand the frequencies between student gender and persistence variables. Since the contingency table met the chi-square test assumptions, as each subject contributed to one cell of the contingency table and there were no expected counts less than 5, the researcher continued

to analyze the results of the chi-square tests to review the association between credit hours and persistence.

Table 9 and Table 10 demonstrate there was a significant association between gender and student persistence $X^2(1) = 4.853, p < .001$. *Cramer's V* = .019, $p < .028$ indicated that there was a significant, but very weak association between the independent and dependent variables. The odds ratio showed the odds of female students were 1.22 times more likely to persist than male students.

Table 8

Frequencies among Gender and Persistence

		Persistence			
		No	Yes	Total	
Gender	Male	Count	1575 _a	2741 _b	4316
		Expected Count	1518.3	2797.7	4316.0
		% within Gender	36.5%	63.5%	100.0%
		% within Persistence	34.0%	32.1%	32.8%
		% of Total	12.0%	20.8%	32.8%
		Standardized Residuals	1.5	-1.1	
		Female	Female	Count	3056 _a
Expected Count	3112.7			5735.3	8848.0
% within Gender	34.5%			65.5%	100.0%
% within Persistence	66.0%			67.9%	67.2%
% of Total	23.2%			44.0%	67.2%
Standardized Residuals	-1.0			0.7	
Total	Total			Count	4631
		Expected Count	4631.0	8533.0	13164.0
		% within Gender	35.2%	64.8%	100.0%
		% within Persistence	100.0%	100.0%	100.0%
		% of Total	35.2%	64.8%	100.0%

Table 9*Chi-Square results of association among Gender and Persistence*

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2- sided)	Exact Sig. (1- sided)	Point Probability
Pearson Chi-Square	4.853 ^a	1	.028	.028	.015	
Continuity Correction ^b	4.768		.029			
Likelihood Ratio	4.840	1	.028	.028	.015	
Fisher's Exact Test				.028	.014	
Linear-by-Linear Association	4.853 ^c	1	.028	.028	.015	.001
N of Valid Cases	13164					

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 1518.34

b. Computed only for a 2x2 table

c. The standardized statistic is 2.203.

Table 10*Cramer's V results of association between Gender and Persistence*

	Value	Approximate Significance	Exact Significance
Nominal by Nominal			
Cramer's <i>V</i>	.019	.028	.028
N of Valid Cases	13164		

Table 11 presents the results of the contingency table used to understand the frequencies between student race/ethnicity and persistence variables. Since the contingency table met the chi-square test assumptions, as each subject contributed to one cell of the contingency table and there were no expected counts less than 5, the researcher continued to analyze the results of the chi-square tests to review the association between credit hours and persistence.

Table 12 and Table 13 demonstrate there was a significant association between race/ethnicity and student persistence $X^2(1) = 52.576, p < .001$. *Cramer's V* = .063, $p < .001$ indicated that there was a significant, but very weak association between the independent and dependent variables. The odds ratio showed that Hispanic/Latino students were 1.67 times more likely to persist than African American students, 1.17 times more likely than White students, and 1.07 times more likely to persist than the all other race/ethnicity group. Also, the odds ratio showed that for the all other race/ethnicity group that students were 1.09 times more likely to persist than White students and 1.56 times more likely to persist than African American students. Lastly, the odds ratio showed that White students were 1.43 times more likely to persist than African American students.

Table 11*Frequencies among Race/Ethnicity and Persistence*

			Persistence		
			No	Yes	Total
Race/Ethnicity	White	Count	3415 _a	6489 _b	9904
		Expected Count	3484.2	6419.8	9904.0
		% within Race/Ethnicity	34.5%	65.5%	100.0%
		% within Persistence	73.7%	76.7%	75.2%
		% of Total	25.9%	43.0%	75.2%
		Standardized Residuals	-1.2	0.9	
African American	African American	Count	695 _a	927 _b	1622
		Expected Count	570.6	1051.4	1622.0
		% within Race/Ethnicity	42.8%	57.2%	100.0%
		% within Persistence	15.0%	10.9%	12.3%
		% of Total	5.3%	7.0%	12.3%
		Standardized Residuals	5.2	-3.8	
Hispanic/Latino	Hispanic/Latino	Count	220 _a	492 _b	712
		Expected Count	250.5	461.5	712.0
		% within Race/Ethnicity	30.9%	69.1%	100.0%
		% within Persistence	4.8%	5.8%	5.4%
		% of Total	1.7%	3.7%	5.4%
		Standardized Residuals	-1.9	1.4	
All Other	All Other	Count	301 _a	625 _a	926
		Expected Count	325.8	600.2	926.0
		% within Race/Ethnicity	32.5%	67.5%	100.0%
		% within Persistence	2.3%	4.7%	7.0%
		% of Total	2.3%	4.7%	7.0%
		Standardized Residuals	-1.4	1.0	
Total	Total	Count	4631	8533	13164
		Expected Count	4631.0	8533.0	13164.0
		% within Race/Ethnicity	35.2%	64.8%	100.0%
		% within Persistence	100.0%	100.0%	100.0%
		% of Total	35.2%	64.8%	100.0%
		Standardized Residuals	35.2%	64.8%	100.0%

Table 12*Chi-Square results of association among Race/Ethnicity and Persistence*

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2- sided)	Exact Sig. (1- sided)	Point Probability
Pearson Chi-Square	52.576 ^a	3	.000	.000		
Likelihood Ratio	51.532	3	.000	.000		
Fisher's Exact Test				.000		
Linear-by-Linear Association	.050 ^b	1	.822	.828	.416	.008
N of Valid Cases	13164					

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 250.48

b. The standardized statistic is .224

Table 13*Cramer's V results of association between Race/Ethnicity and Persistence*

	Value	Approximate Significance	Exact Significance
Nominal by Nominal			
Cramer's V	.063	.000	.000
N of Valid Cases	13164		

Chapter Summary

This chapter provided the results of the chi-square analysis in this retrospective study. The researcher tested the association among the dependent variable (persistence) and independent variables (age, gender, race/ethnicity). Overall, the research questions

and research hypotheses could be answered by performing the chi-square analysis and all variables were found to be significant. Chapter V will discuss the results and recommendations for future research.

CHAPTER V.

DISCUSSION

The purpose of this research study aimed to investigate if credit hour enrollment impacts student persistence among adult learners in the community college setting. The researcher implemented the use of the chi-square analysis to test the study's research questions and hypotheses. Even though not all of the hypotheses corresponded with the results from this study, the findings provide information that can help guide future research associated with adult learners and differences in enrollment hours that lead to persistence.

The first hypothesis stated that students enrolled in less than 12 credit hours is associated with persistence among community college students. The results of the contingency table indicated that there was a significant association among those enrolled in 12+ credit hours and persistence. Therefore, this stated hypothesis must be rejected by the researcher. However, it should be mentioned that those enrolled in the 8-11 credit hour range had similar association results in persistence to those in the 12+ credit hour range. While the results of the Cramer's V test indicated a significant but weak association with credit hour enrollment and persistence, the odds ratio findings do suggest that those enrolled in the 8-11 credit hour had similar outcomes as those in the 12+ credit hour group in terms of persistence. As a result of this finding, there could be enough evidence to suggest investigating the benefits of adding one additional course to those enrolled in 1-7 credit hours as it relates to persistence outcomes within the part-time credit hour range.

Research surrounding credit hour recommendations has suggested that full-time enrollment is needed to achieve more favorable persistence results (Attewell & Monaghan, 2016; Belfield et al., 2016; Jenkins & Bailey, 2017). On average, many adult learners are enrolled at the part-time status in the community college (CCRC, 2021). Research dedicated to persistence outcomes at the part-time level would be beneficial for the purposes of course planning, program enhancement, and policy discussions related specifically to adult learners and their enrollment needs.

Continuing to analyze the descriptive statistics, the number of students enrolled in each category was also insightful. The 1-7 credit hour range had 6,153 students enrolled; the 8-11 credit hour range had 2,607 students enrolled; and the 12+ credit hour range had 4,366 students enrolled. When reflecting on this data, the researcher concluded that 47 percent of students were enrolled in the lowest range of credit hour options, resulting in the least persistence outcome. The 8-11 credit hour range comprised 20 percent of the student population resulting in the lowest participation range. The 12+ range comprised 33 percent of the population resulting in the second choice for credit hour enrollment outside the lowest part-time level. When reflecting on the percentage of those enrolled in 12+ credit hours, there may be additional factors as to why these students chose this credit hour level and persisted higher in the 12+ category. One assumption is that they may be attending full-time due to being enrolled in a cohort program (i.e. Health Sciences program, Nursing program) requiring full-time course sequencing. These results validate that most students enroll at the lower or higher end of credit hour offerings.

The second hypothesis stated that age is associated with persistence among community college students. The results of the chi-square test indicated that there is a

significant association between student age and student persistence. While the Cramer's V test indicated a significant but weak association between age and persistence, the results of the contingency table suggested that students in the 31-35 age group are persisting more than those in the 25-30 age group and 36+ age group. Additionally, those in the 31-35 and 36 and older age groups had higher odds ratios of persisting over those in the 25-30 age group. This finding corresponds with Ellis (2020a) research on adult learner enrollment and their outcomes due to their stronger dedication to learning over those younger college students.

The third hypothesis stated that gender is associated with persistence among community college students. The results of the chi-square test indicated that there is a significant association between student gender and persistence. While the Cramer's V test indicated that there was a significant but weaker association among gender and persistence, the contingency table results indicated that female students are persisting more than male students. This finding corresponds with Markle (2015) who found that women were found to have a harder time persisting due to their "interrole conflicts" but showed dedication and persisting over men. Additionally, this finding corresponds with Juskiewicz (2020) who recently published the 2020 analysis of trends related to community college student enrollment and completion found that female students persisting and completing more than male students.

The fourth hypothesis stated that race/ethnicity is associated with persistence among community college students. While the results of the Cramer's V test indicated a significant but weak association among the groups, it does provide insight to how each race/ethnicity group is persisting at this community college. Within this study, the results

of the descriptive data consisted of approximately 75 percent White students. As stated in chapter two, focusing on race/ethnicity and persistence outcomes they are more favorable for White and Asian students than Black and Hispanic/Latino students (Belfield et al., 2019). Additionally, in the study performed by Belfield et al. (2019), the researchers evaluated nine early momentum metrics during the first year to find that approximately two-fifths of Black and Hispanic students stay only one semester at community college. When evaluating the results of this study, the results are similar with the African American students persisting the least amount in comparison to the other group analyzed in this study and their odds ratio for persisting were found to be the least amount among all the groups.

Conclusions and Recommendations

Numerous national, state, and institutional efforts have been dedicated to improving student enrollment and completion within the higher education sector. For example, Tennessee's *Drive to 55* initiative and Lumina Foundation's goal of 60% of working adult learners obtaining a postsecondary credential by 2025 (Tennessee Higher Education Commission, 2015; Lumina Foundation, n.d.). Students attending colleges and universities present themselves to institutions from various backgrounds with individual characteristics that often impact their ability to persist and complete a postsecondary credential (Karmelita, 2020). This is particularly common among community college students (Soares et al., 2017). As such, community colleges have a diverse student population consisting of students who vary in age, academic readiness, and reasons for enrolling. With their open access approach, community colleges meet students where they are and provide education to many who may not have a pathway to a college

education (Mullin, 2017). Adult learners are attracted to community colleges because of their shorter pathways to credentials and degrees, course transferability to universities, cost-saving benefits, and the ability to enter the workforce quickly. Therefore, community colleges have been found to be a central starting point for higher education for adult learners (Juszkiewicz, 2019).

Research on student persistence has repeatedly focused on those traditionally aged students who often enroll full-time (Ellis, 2020a). While it is common for college students to have additional responsibilities outside of the classroom, adult learners have been identified throughout the literature as having even more responsibilities that often prevent their ability to attend full-time (Ardisson et al., 2021; Crosta, 2014; Soares et al., 2017). Therefore, research on adult learners is necessary for the higher education sector to continue to structure their programs, practices, and policies with adult learner needs in mind (Chen, 2017; Rabourn et al., 2018). For higher education institutions to meet state and national goals, institutions need more adult learners to persist and earn postsecondary credentials (Obama, 2009; Carnevale et al., 2021; Chan, 2022). As an example, projections have indicated that higher education institutions will continue to be presented with fewer high school graduates in the coming years (Kamer & Ishitani, 2021). With this possible reality, the higher education institutions must focus on adult learners to fill the gap of students from the high school pipeline. The more adult learners in the postsecondary pipeline, the more research is needed to guide them accurately and effectively as students.

The findings in this study correspond with Okun et al. (1990) that students who enrolled in more than 13 hours each semester persisted higher than those enrolled in less

than 13 credit hours. In addition, it aligns with research on academic momentum that recommends that students enroll in 12+ credit hours to achieve persistence (Adelman, 2006; Attewell & Monaghan, 2016; Belfield et al., 2016; Jenkins & Bailey, 2017). Furthermore, this study allowed the researcher to explore Bean & Metzner's (1985) conceptual model of nontraditional undergraduate student attrition, which enhances on previous research that student socialization in college leads to persistence and focuses on the external environmental factors such as employment and family that impact their ability to persist. The model also incorporates the number of enrollment hours, known as "enrollment status," as one of the background and defining variables that have a direct line in the model to student dropout status. In addition to exploring Bean & Metzner's (1985) model, the researcher explored Bahr's (2013) deconstructive approach to understanding community college student pathways and outcomes to gain knowledge of the student pathways that lead to persistence. It appears that the results from this study support aspects of both models utilized in the study. First, the results suggest that a student's decision on the number of courses to enroll in for a particular semester can influence their persistence to the next semester as credit hour was found to be a significant variable. Second, the results provided a glimpse into understanding "...behavioral mechanisms—the pathways, course-taking behaviors, and enrollment patterns—that connect characteristics to outcomes" (Bahr, 2013, p. 150). Third, the results of this study support both Bean & Metzner's (1985) model and Bahr's (2013) approach by providing research dedicated to adult learners by evaluating their credit hour enrollment and persistence outcomes.

Limitations

While the results from this study were significant, they should be viewed cautiously as they cannot prove causation. Additionally, the data collected represents one community college and can only be interpreted as generalizable information. The variables of this study consist of only credit hour enrollment, age, gender, and race/ethnicity. Therefore, the results of this study only provide a limited frame of reference related to the results of student persistence.

The first limitation in this study involves a student's decision to persist has posed a challenge to research, as knowing a student's intended goal at the community college can be different for each student who enrolls (Hatch & Garcia, 2017). In this study, results from the Cramer's V tests indicated a weak association among all independent variables on the dependent variable. As a result, this weak association indicates that there may be many additional factors related to student persistence, retention, and graduation that exist in addition to the variables used in this study.

The second limitation is related the students credit hour enrollment choice. The results of this study suggest that students enrolled in 12+ credit hours persisted more than those enrolled in less than 12 credit hours. In this study, there was no way to identify why a student enrolled at a particular credit hour level and the associated outcome related to persistence based off the selected enrollment. One assumption could be that students may have to be enrolled in a cohort program that requires full-time status to obtain a particular degree. Another is that they must maintain a certain number of credit hours for their scholarships or financial aid requirements.

The third limitation related to this study is the diversity among the students represented in the dataset was limited. In this study, over 75% of the dataset contained White students and almost twice as many females than males. Requesting data from multiple community colleges could provide a more robust dataset with more inclusive representation of student persistence outcomes.

Future Research Applications

Future research involving adult learner persistence should be established based off the results of the research questions, hypotheses, chi-square tests results, and limitations found in this study. These recommendations include incorporating additional variables, utilizing a mixed methods research design, concentrating on first semester credit hour enrollment, utilizing a more diverse student population, and continuation of research on credit hour recommendations at the part-time rate.

The first future research recommendation is to consider incorporating other external student variables such as intended goals, employment obligations, and family responsibilities. Incorporating these variables would be beneficial in understanding the other factors that impact adult learner persistence outside of just credit hour exploration. Implementing a survey with targeted questions related to the student would help expand insight into students and their responsibilities outside the classroom. For example, Bergman et al. (2014) utilized the Adult Learner Persistence Study (ALPS) instrument to investigate student variables and degree completion. The survey questions were centered around Bean and Metzner's (1985) Conceptual Model of Undergraduate Nontraditional Student Attrition model, which included internal campus/academic environment and external variables to understand better how those variables impact adult learner

persistence. Each theme area probed more thorough questions about the number of enrolled credit hours, individualized characteristics, and personal responsibilities. Additionally, Okun et al. (1990) researched whether credit load impacted a student's intent to continue with community college enrollment the next semester. The researchers utilized a questionnaire comprising demographic questions and questions related to the number of hours working, hours studying, enrolled credit hours, and measurement of perceived college satisfaction. Both studies utilized a survey that inquires specific questions related to community college adult learners, which could be helpful when analyzing additional variables related to credit hour enrollment and persistence outcomes.

The second future research recommendation is utilization of a mixed methods approach by adding a qualitative component which could provide insight into student experiences and the decisions that lead to enrollment at a particular credit hour range. Kopko and Griffin (2020) performed qualitative research, including interviews and focus groups, to investigate student experiences with the onboarding process at two Florida community colleges. In these onboarding experiences, students meet with an advisor to develop their education plan based on their career interests, including mapping out a course schedule. Utilizing this research design allows student voices to be heard in their experiences, which can enhance the research outside of quantitative data alone to make inferences regarding reasons for credit hour selections and persistence.

The third future research recommendation is to narrow the focus on the number of credit hours adult learners choose to enroll in during their first semester to assess the results as they relate to persistence. In this current study, all students were reviewed regardless of whether it was their first or subsequent semester. As mentioned in the

literature review, several studies have evaluated first-semester enrollment as a metric for predicting academic momentum and persistence (Attewell & Monaghan, 2016; Clovis & Chan, 2019; Crosta, 2013; Kamer & Ishitani, 2021B). Focusing on the number of credit hours taken during first-semester enrollment could help to investigate if credit hour enrollment at a particular level impacts student persistence. Most importantly, framing research around first-semester enrollment related to persistence could support academic advisors and enrollment professionals in providing credit hour recommendations to adult learners who need to enroll in less than full-time status.

The fourth research recommendation is to perform adult learner credit hour research and persistence results on a more extensive and diverse sample size is recommended. In this current study, White students comprised 75.2 percent of the dataset. Data encompassing a more diverse student population could provide a more inclusive representation of credit hour enrollment and persistence related to other race/ethnicity groups. For example, the data could be requested from multiple community colleges, universities, or even statewide. The results from a larger, more diverse sample could be compared to the results of this study to understand any commonalities and differences while continuing research efforts on the adult learner population.

The last future research recommendation is to focus research on part-time credit hour enrollment outcomes and student persistence. As mentioned throughout, recommendations outside of full-time status have been found to be limited (Attewell et al., 2012; Kasworm, 2014). Research on academic momentum has focused on suggesting that students should register for 15 credit hours rather than the minimum 12 credit hours that puts students at full-time status (Attewell & Monaghan, 2016; Davidson &

Blankenship, 2017; Jones, 2015). The results from the credit hour contingency table suggest that students enrolled in 8-11 credit hours had similar persistence results as those enrolled in 12+ credit hours. Further research focused on this finding would be useful as the results of this research would benefit those who cannot enroll in full-time status. Moreover, it would provide specific research on credit hour suggestions that academic advisors can utilize when planning courses with adult learners.

Future Practical Applications

The results from this study would benefit several constituents in the higher education community interested in adult learners' persistence. These individuals are state legislatures and policymakers, college and university board members, higher education administrators, academic advisors, and students, to name a few. In addition, the results of this study provide information focused on adult learners when creating policies and programs and for advisors when providing credit hour course recommendations.

Adult learner persistence and completion are essential to meet labor and workforce demands. The impact of an adult learner's time to degree can be a barrier to persistence and college completion (Shapiro et al., 2016). Research confirms that enrollment at the full-time rate is less achievable for adult learners given their additional family and employment responsibilities (Attewell & Monaghan, 2016). As research indicates, enrollment at the full-time status results in greater student persistence levels (Davidson & Blankenship, 2017; Clovis & Chang, 2019; Crosta, 2014; Huntington-Klein & Gill, 2021). Creation, encouragement, and support to the community colleges from the state and national levels to explore and incorporate different approaches to helping students gain credit outside the traditional methods should be prioritized. Partnering with

educational nonprofit organizations at the state level such as Council for Adult and Experiential Learning (CAEL) and Lumina Foundation would help improve current policies and practices with adult learners in mind as these organizations are committed to improving their success by providing up-to-date recommendations. Investigating flexible approaches to where students can gain more credits outside the traditional credit hours should continue to be explored and implemented. Common examples include accelerated course offerings, competency-based education, and prior learning assessment opportunities (Bowers & Bergman, 2016; Chen, 2017). Moving towards creating opportunities outside of traditional credit hour accumulation has been a focus for Tennessee. For example, the 2015-2025 Master Plan for Tennessee Postsecondary Education (2015) recommends,

“Tennessee postsecondary systems and institutions should continue to build on and explore opportunities for the responsible use of competency-based education. A prime and pressing opportunity for doing this is to build a competency-based path into and out of the Associates of Applied Science (A.A.S.) degree” (p. 41).

Additionally, the master plan recommends and encourages the use of prior learning assessments throughout the institutions in the state so that students can use them to satisfy degree requirements.

Within institutions, academic advisors provide students planning recommendations about credit hour enrollment related to persistence (O’Banion, 2020). Adult learners often rely on academic advisors during the onboarding phase and throughout their education to guide them on course planning and scheduling based on the student's intended goals (Hatch & Garcia, 2017; McKinney et al., 2022). While it is

common practice for an academic advisor to help in course selection and planning, having evidence-based research on persistence outcomes at the part-time rate as well as the full-time rate would allow for students to make informed decisions on the course load they want to attempt, given their additional commitments.

While there is relatively minimal research on credit hour suggestions beyond full-time status, future practical research applications of this study should include findings from past studies from Attewell and Monaghan (2016), Belfield et al., (2016), Jenkins & Bailey (2017) where student persistence and momentum improved with full-time course loads. However, since the researcher found similar persistence results in those enrolled at less than full-time rate (8-11 credit hours), additional research related to part-time enrollment would benefit adult learners (Ardissone et al., 2021). Therefore, the primary recommendation that has evolved from this study is that those who guide students in decisions on their credit hour load should emphasize the difference between taking a higher course load versus a lower course load (i.e. time to completion, persistence results) as it relates to student persistence. Although the results of this study could not prove causation and the influence of the credit hour is weak, there may be enough evidence in the outcomes of the credit load ranges to recommend additional research on this finding in hopes of having a viable option for part-time students.

As higher education attainment goals continue to be a priority at the state and national levels, adult learners are needed to help meet the goals. More college students are needed to meet workforce demands and improve economic mobility, which has lasting effects on our society. Adult learners' motivations and barriers differ from those of the traditional age. Time and money are crucial to their ability to enroll and persist.

Therefore, higher education must find better ways to support adult learners and their efforts in persistence and completion.

As stated throughout this study, emphasizing research on credit hours alone, the results of this study suggest that adult learners who enroll in 12+ credit hours have improved persistence outcomes. However, most adult learners enroll at the part-time status (Community College Research Center, 2021). Therefore, innovative approaches complementary to traditional learning modalities, such as competency-based education and prior learning assessments, would help adult learners accrue credit faster (Chen, 2017). Additionally, higher education practitioners should have intentional conversations with adult learners on the impacts of full-time versus part-time enrollment and help guide them in utilizing their time effectively and efficiently to reach their career goals. Most importantly, continued research focusing on part-time enrollment would support higher education practitioners in providing research-based information for those who cannot enroll at the full-time status. In the end, while correctly selecting the number of credit hours that correspond with an adult learner's motivations and barriers may seem like a minor decision, it has lasting effects on their persistence and, ultimately, completion.

Chapter Summary

Frequently, problems are identified in the day-to-day work within the higher education institution. Performing research on those everyday problems allows for improved decision-making based on empirical evidence as possible solutions. In this study, the researcher believed that students who enrolled in less than 12 credit hours would persist at higher levels. As the results have indicated, that was not the case. This outcome could imply that occasionally in higher education, we often observe problems

where we believe their outcome is one way or another based on the everyday work we witness at the institution. While the results of this study were significant in that credit hour impacts persistence in adult learners, it also demonstrates that being data-informed allows for decisions based on the research results and not just intuition.

This purpose of this study was to investigate if credit hour enrollment influences adult learner persistence within a community college setting. From the results of this study, the amount of credit hour enrollment did effect persistence. Those students enrolled in 12+ credit hours had the highest level of persistence outcomes. Moreover, those enrolled in 8-11 credit hours had similar persistence results as those in the 12+ range. While this result cannot be considered evidence for causal correlation due to it only being results of one study and data from one institution, the results of 8-11 credit hour and persistence should be further investigated as it could provide valuable information on persistence outcomes to academic advisors and other higher education professionals as they are helping students in course planning who take courses less than at the full-time credit hour range.

Prior research exploring student persistence has been identified as being a challenge to investigate and this study was no exception (Hatch & Garcia, 2017). This was indicated by the weak association results between all variables and that there could be many other variables that relate to a student's ability to persist in addition to the ones selected for this study. Furthermore, as mentioned in the recommendations for future research, a more diverse sample from multiple community colleges or statewide would provide a more inclusive representation of students. Lastly, continued research focused on adult learners with respect to those enrolled at the part-time status should be continued

to proactively assist these students in persistence and retention efforts. In the end, the results from this study can help guide future research associated with adult learners in hopes to increase their persistence and completion.

REFERENCES

- Adelman, C (1999). *Answers in the toolbox. Academic intensity, attendance patterns, and bachelor's degree attainment*. Washington, DC: US Department of Education.
- Adelman, C. (2006) *The toolbox revisited: Paths to degree completion from high school through college*. Washington, DC: US Department of Education.
- Ancel, S. (2018, February 23). *15 to finish* and returning adult learners*. Complete College America. <https://completecollege.org/resource/15-finish-returning-adults/>
- Ardissone, A. N., Galindo, S., Wysocki, A. F., Triplett, E. W., & Drew, J. C. (2021). The need for equitable scholarship criteria for part-time Students. *Innovative Higher Education*, 46(4), 461.
- Attewell, P., Heil, S., & Reisel, L. (2012). What Is Academic Momentum? And Does It Matter? *Educational Evaluation and Policy Analysis*, 34(1), 27–44.
- Attewell, P. & Monaghan, D. (2016). How many credits should an undergraduate take? *Research in Higher Education*, 57(6), 682–713.
- Bahr, P. R. (2013). The deconstructive approach to understanding community college students' pathways and outcomes. *Community College Review*, 41(2), 137–153. <https://doi.org/10.1177/0091552113486341>
- Bailey, T. R., Jaggars, S. S., & Jenkins, D. (2015). *Redesigning America's community college: A clearer path to student success*. Cambridge Massachusetts: Harvard Press.

- Bean, A. G., & Covert, R. W. (1973). Prediction of college persistence, withdrawal, and academic dismissal: A discriminant analysis. *Educational and Psychological Measurement, 33*(2), 407–411. <https://doi.org/10.1177/001316447303300223>
- Bean, J. P., & Metzner, B. S. (1985). A conceptual model of nontraditional undergraduate student attrition. *Review of Educational Research, 55*(4), 485–540. <https://doi.org/10.3102/00346543055004485>
- Belfield, C. R., Jenkins, D., & Fink, J. (2019). *Early Momentum Metrics: Leading Indicators for Community College Improvement*. Community College Research Center. <https://eric.ed.gov/?id=ED596315>
- Belfield, C., Jenkins, D., & Lahr, H. (2016). *Momentum: The academic and economic value of a 15-credit first-semester course load for college students in Tennessee [unpublished manuscript]*. <https://ccrc.tc.columbia.edu/publications/momentum-15-credit-course-load.html>
- Bell, E. (2020). The politics of designing tuition-free college: How socially constructed target populations influence policy support. *Journal of Higher Education, 91*(6), 888–926. <https://doi.org/10.1080/00221546.2019.1706015>
- Bellare, Y., Smith, A., Cochran, K., & Lopez, S. (2021). Motivations and barriers for adult learner achievement: Recommendations for institutions of higher education. *Adult Learning, 0*(0), 1-10. <https://doi.org/10.1177/10451595211059574>
- Bergman, M., Gross, J.P.K., Berry, M., & Shuck, B. (2014). If life happened but a degree didn't: Examining factors that impact adult persistence. *Journal of Continuing Higher Education, 62*(90), 90-101.

- Bowers, A., & Bergman, M. (2016). Affordability and the Return on Investment of College Completion: Unique Challenges and Opportunities for Adult Learners. *Journal of Continuing Higher Education*, 64(3), 144–151. <https://doi-org.ezproxy.mtsu.edu/10.1080/07377363.2016.1229102>
- Brock, T., & Slater, D. (2021). *Strategies for Improving Postsecondary Credential Attainment Among Black, Hispanic, and Native American Adults*. Community College Research Center. <https://ccrc.tc.columbia.edu/publications/credential-attainment-black-hispanic-native-american-adults.html>
- Cabrera, N. L., Karaman, A. K., Ballysingh, T. A., Oregon, Y. G., Gonell, E. A., Lopez, J. D., & Deil-Amen, R. (2021). Race without gender? Trends and limitations in the higher education scholarship regarding men of color. *Review of Educational Research*. <https://doi-org.ezproxy.mtsu.edu/10.3102/003465432111054577>
- Carnevale, A., Cheah, B., & Wenzinger, E. (2021). *The college payoff: More education doesn't always mean more earnings*. https://1gyhoq479ufd3yna29x7ubjn-wpengine.netdna-ssl.com/wp-content/uploads/cew-college_payoff_2021-fr.pdf
- Center for Community College Student Engagement. (2017). *Even one semester: Full-time enrollment and student success*. https://www.ccsse.org/docs/Even_One_Semester.pdf
- Chakrabarti, R., Gorton, N., & Lovenheim, M. (2020). State investment in higher education: Effects on human capital formation, student debt, and long-term financial outcomes of students (N. 27885). *National Bureau of Economic Research*. Cambridge, MA.

- Chan, R. Y. (2022). Do credit momentum policies through the 15 to finish improve academic progression and completion of low-income, first-generation students? Evidence from a college promise program. *Research in Higher Education*.
<https://doi.org/10.1007/s11162-022-09687-7>
- Chen, J. C. (2017). Nontraditional adult learners: The neglected diversity in postsecondary education. *SAGE Open*, 7(1).
<https://doi.org/10.1177/2158244017697161>
- Chen, Y., & Hu, X. (2021). The nudge to finish up: A national study of community college near-completion students. *Research in Higher Education*, 62(5), 651.
<https://doi.org/10.1007/s11162-020-09613-9>
- Collom, G. D. (2022). A quasi-experimental investigation of adult student enrollment responses to the Tennessee Reconnect grant. *Community College Journal of Research and Practice*, 1–16.
- Collom, G. D., Biddix, J. P., & Svoboda, B. L. (2021). “I’m not letting nothing stop me this time”: Transitions among adult learners using the Tennessee Reconnect grant. *Community College Review*, 49(4), 413–434.
<https://doi.org/10.1177/00915521211026679>
- Community College Research Center. (2021, July). *An introduction to community colleges and their students*.
<https://ccrc.tc.columbia.edu/media/k2/attachments/introduction-community-colleges-students.pdf>

- Complete College America. (n.d.). About. [https://completecollege.org/about-us/#:~:text=Complete%20College%20America%20\(CCA\)%20is,policies%20that%20improve%20student%20success.](https://completecollege.org/about-us/#:~:text=Complete%20College%20America%20(CCA)%20is,policies%20that%20improve%20student%20success.)
- Council for Adult and Experiential Learning. (n.d.). *About Us*.
<https://www.cael.org/about-us>
- Council of Adult and Experiential Learning. (2021). *Adept to adapting*.
[https://www.cael.org/hubfs/021-21%20CAEL%20Adept%20Booklet%20\(1\).pdf](https://www.cael.org/hubfs/021-21%20CAEL%20Adept%20Booklet%20(1).pdf)
- Crosta, P. (2013). *Characteristics of early community college dropouts*. Community College Research Center. <https://doi.org/10.7916/D8TT4NZP>
- Crosta, P. M. (2014). Intensity and attachment: How the chaotic enrollment patterns of community college students relate to educational outcomes. *Community College Review*, 42(2), 118–142. <https://doi.org/10.1177/0091552113518233>
- Davidson, C. T., Ashby-King, D. T., & Sciulli, L. J. (2020). The higher education funding revolution: An exploration of statewide community college “free tuition” programs. *Community College Journal of Research and Practice*, 1–16.
<https://doi.org/10.1080/10668926.2018.1558135>
- Davidson, J. C., & Blankenship, P. (2017). Initial academic momentum and student success: Comparing 4- and 2-year students. *Community College Journal of Research and Practice*, 41(8), 467–480.
<https://doi.org/10.1080/10668926.2016.1202158>
- Doolan, D. M., & Froelicher, E. S. (2009). Using an existing data set to answer new research questions: A methodological review. *Research and Theory for Nursing Practice*, 23(3), 203–215. <https://doi.org/10.1891/1541-6577.23.3.203>

- Drive to 55. (n.d.). *About the alliance*. <https://driveto55.org/the-alliance/>
- Eaker, R. & Sells., D. (2016). *A new way: Introducing Higher Education to Professional Learning Communities at work*. Bloomington, Indiana: Solution Tree Press.
- Ellis, H. (2019a). A nontraditional conundrum: The dilemma of nontraditional student attrition in higher education. *College Student Journal*, 53(1), 24–33.
- Ellis, H. (2019b). Pursuing the conundrum of nontraditional student attrition and persistence: A follow-up study. *College Student Journal*, 53(4), 439–450.
- Field, A. (2018). *Discovering statistics using IBM SPSS statistics*. Thousand Oaks, California: Sage Publications Inc.
- Franke, T.M., Ho, T., & Christie, C.A. (2012). The chi-square test: Often used and more often misinterpreted. *American Journal of Evaluation*, 33(3), 448-458. https://doi-org.ezproxy.mtsu.edu/10.1177/1098214011426594open_in_new
- Gardner, A. C., Maietta, H. N., Gardner, P. D., & Perkins, N. (2021). Online postsecondary adult learners: An analysis of adult learner characteristics and online course taking preferences. *American Journal of Distance Education*, 1–17. <https://doi.org/10.1080/08923647.2021.1928434>
- Gardner, A. C., Maietta, H. N., Gardner, P. D., & Perkins, N. (2022). Postsecondary Adult Learner Motivation: An Analysis of Credentialing Patterns and Decision Making Within Higher Education Programs. *Adult Learning*, 33(1), 15–31. <https://doi.org/10.1177/1045159520988361>
- Goings, R. B. (2018). “Making up for lost time”: The transition experiences of nontraditional black male undergraduates. *Adult Learning*, 29(4), 158–169. <https://doi.org/10.1177/1045159518783200>

- Hardin, C. J. (2008). Adult students in higher education: A portrait of transitions. *New Directions for Higher Education*, 2008(144), 49–57.
- Hatch, D. K., & Garcia, C. E. (2017). Academic advising and the persistence intentions of community college students in their first weeks in college. *Review of Higher Education*, 40(3), 353–390.
- Heffernan, J. M. (1973). The credibility of the credit hour: The history, use, and shortcomings of the credit system. *The Journal of Higher Education*, 44(1), 61–72. <https://doi.org/10.2307/1980626>
- Hess, F. M. (2019). A modest proposal regarding college admissions. *Society*, 56(4), 327. <https://doi.org/10.1007/s12115-019-00393-2>
- Hughes, K. (2012). *The college completion agenda 2012 progress report*. College Board. <https://secure-media.collegeboard.org/digitalServices/pdf/advocacy/policycenter/college-completion-agenda-2012-progress-report.pdf>
- Huntington-Klein, N., & Gill, A. (2021). Semester course load and student performance. *Research in Higher Education*, 62(5), 623–650. <https://doi.org/10.1007/s11162-020-09614-8>
- Jameson, M. M., & Fusco, B. R. (2014). Math anxiety, math self-concept, and math self-efficacy in adult learners compared to traditional undergraduate students. *Adult Education Quarterly*, 64(4), 306–322. <https://doi.org/10.1177/0741713614541461>
- Jenkins, D., Lahr, H., & Fink, J. (2022). Rethinking community colleges to serve 21st-century students and communities: Lessons from research on guided pathways.

New Directions for Community Colleges, 2022(197), 107–120.

<https://doi.org/10.1002/cc.20501>

Johnson, R. B., & Christensen, L. (2020). *Educational research: Quantitative, qualitative, and mixed Approaches (7th Ed.)*. Thousand Oaks, California: Sage Publications.

Jones, S. (2015). The game changers: Strategies to boost college completion and close attainment gaps. *Change: The Magazine of Higher Learning*, 47(2), 24–29.

<https://doi.org/10.1080/00091383.2015.1018085>

Juszkiewicz, J. (2020). *Trends in community college and completion data* (No. 6).

Washington, DC. <https://files.eric.ed.gov/fulltext/ED610261.pdf>

Kamer, J. A., & Ishitani, T. (2021a). The effects of rising proportions of adult students on graduation rates at public, two-year institutions. *Community College Journal of Research and Practice*, 45(11), 822–833.

<https://doi.org/10.1080/10668926.2020.1811802>

Kamer, J. A., & Ishitani, T. T. (2021b). First-year, nontraditional student retention at four-year institutions: How predictors of attrition vary across time. *Journal of College Student Retention: Research, Theory & Practice*, 23(3), 560–579.

<https://doi.org/10.1177/1521025119858732>

Kasworm, C. E. (2014). Paradoxical understandings regarding adult undergraduate persistence. *Journal of Continuing Higher Education*, 62(2), 67–77.

<https://doi.org/10.1080/07377363.2014.916587>

- Kasworm, C. E. (2018). Adult students: A confusing world in undergraduate higher education. *Journal of Continuing Higher Education*, 66(2), 77–87.
<https://doi.org/10.1080/07377363.2018.1469077>
- Kopko, E., & Griffin, S. (2020). Redesigning community college student onboarding through guided pathways. Part 2: Student perspectives on reformed practices at two florida colleges. In *Community College Research Center, Teachers College, Columbia University*. <https://files.eric.ed.gov/fulltext/ED604995.pdf>
- Lanford, M. (2019). Making sense of “outsiderness”: How life history informs the college experiences of “nontraditional” students. *Qualitative Inquiry*, 25(5), 500–512. <https://doi.org/10.1177/1077800418817839>
- Lanford, M. (2021). In pursuit of respect: The adult learner attending community college in the “new economy.” *The Educational Forum*, 85(1), 34–48.
<https://doi.org/10.1080/00131725.2020.1775329>
- Lang, R., Ryu, M., & Shapiro, D. (2021). Yearly success and progress rates. Sixth in the series. In *National Student Clearinghouse*. National Student Clearinghouse Research Center. <https://eric.ed.gov/?id=ED613160>
- Lumina Foundation (n.d.) *About*. <https://www.luminafoundation.org/about/>
- Lumina Foundation (n.d.) *State strategy lab*.
<https://www.luminafoundation.org/state/tennessee/>
- Lumina Foundation (2019). *Today’s student*.
<https://www.luminafoundation.org/resource/todays-student/>

Lumina Foundation (2022). *A stronger nation*.

<https://www.luminafoundation.org/stronger-nation/report/#/progress>

Markle, G. (2015). Factors influencing persistence among nontraditional university students. *Adult Education Quarterly*, 65(3), 267–285.

<https://doi.org/10.1177/0741713615583085>

McCall, R., Padron, K., & Andrews, C. (2018). Evidence-based instructional strategies for adult learners: A review of the literature. *Codex (2150-086X)*, 4(4), 29–47.

McHugh, M. (2009). The odds ratio: Calculation, usage, and interpretation. *Biochemia Medica*, 19(2), 120-126.

McHugh, M. (2013). The chi-square test of independence. *Biochemia Medica*, 23(2), 143-149. <http://doi.org/10.11613/BM.2013.018>

McKinney, L., Burrige, A. B., Lee, M. M., Bourdeau, G. V., & Miller-Waters, M. (2022). Incentivizing full-time enrollment at community colleges: What influences students' decision to take more courses? *Community College Review*, 50(2), 144–170. <https://doi.org/10.1177/00915521211061416>

Meehan, K., & Kent, D. C. (2020). *Developing a statewide college completion agenda:* (p. 13). https://www.researchforaction.org/wp-content/uploads/2021/07/1379.RFA_Lessons_from_Tennessee_V6-003.pdf

Miller, N. B. (2014). Nontraditional student graduation rate benchmarks. *Journal of Continuing Higher Education*, 62(3), 141–151.

<https://doi.org/10.1080/07377363.2014.953437>

- Mullins, C. M. (2017). *When less is more: Prioritizing open access*. American Association of Community Colleges.
<https://files.eric.ed.gov/fulltext/ED579759.pdf>
- National Center for Educational Statistics. (n.d.). *Data and definitions*.
<https://nces.ed.gov/pubs/web/97578e.asp>
- National Center for Educational Statistics. (n.d.). *Trend generator*.
<https://nces.ed.gov/ipeds/trendgenerator/>
- Ness, E. C., Rubin, P. G., & Hammond, L. (2021). Becoming a “game changer”: Complete College America’s role in U.S. higher education policy. *Higher Education*, 82(1), 1-17.
<https://ezproxy.mtsu.edu/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=edsgao&AN=edsgcl.662986907&site=eds-live&scope=site>
- Obama, B. (2009, February 24). Remarks of President Barack Obama—Address to joint session of Congress. Washington, DC. <https://obamawhitehouse.archives.gov/the-press-office/remarks-president-barack-obama-address-joint-session-congress>
- O’Banion, T. (2019). *Academic Advising in the Community College*. Rowan and Littlefield Publishers.
- Okun, M. A., Weir, R. M., Richards, T. A., & Benin, M. H. (1990). Credit Load as a Moderator of the Intent-Turnover Relation among Community College Students. *The Journal of Experimental Education*, 58(3), 213–222.
- Osam, E. K., Bergman, M., & Cumberland, D. M. (2017). An integrative literature review on the barriers impacting adult learners’ return to college. *Adult Learning*, 28(2), 54. <https://doi.org/10.1177/1045159516658013>

- Pascarella, E. T. (1980). Student-Faculty Informal Contact and College Outcomes. *Review of Educational Research*, 50(4), 545–595.
- Perna, L. W., Kvaal, J., & Ruiz, R. (2017). An updated look at student loan debt repayment and default. Penn Wharton Public Policy Initiative.
- Perna, L. W., & Leigh, E. W. (2018). Understanding the promise: A typology of state and local college promise programs. *Educational Researcher*, 47(3), 155–180.
- Rabourn, K. E., BrckaLorenz, A., & Shoup, R. (2018). Reimagining student engagement: How nontraditional adult learners engage in traditional postsecondary environments. *Journal of Continuing Higher Education*, 66(1), 22–33.
<https://doi.org/10.1080/07377363.2018.1415635>
- Salkind, N. J. (2010). *Encyclopedia of research design*. [electronic resource]. SAGE.
- Sallee, M. W. & Cox, R. D. (2019). Thinking beyond childcare: Supporting community college student-parents. *American Journal of Education*, 125(4), 621–645.
<https://doi.org/10.1086/704094>
- Shapiro, D., Dundar, A., Wakhungu, P.K., Yuan, X., Nathan, A., & Hwang Y. (2016). *Time to degree: A national view of the time enrolled and elapsed for associate and bachelor's degree earners* (Signature Report N. 11).
<https://nscresearchcenter.org/signaturereport11/>
- Shapiro, D., Dundar, A., Huie, F., Wakhungu, P. K., Yuan, X., Nathan, A., & Hwang, Y. (2017). *Tracking transfer: Measures of effectiveness in helping community college students to complete bachelor's degrees* (Signature Report N. 13).
<https://files.eric.ed.gov/fulltext/ED580214.pdf>

- Soares, L., Gagliardi, J. S., & Nellum, C. J. (2017). *The post-traditional learners manifesto revisited*. American Council on Education.
<https://www.acenet.edu/Research-Insights/Pages/Student-Support/Post-Traditional-Learners.aspx>
- Spady, W. G. (1970). Dropouts from higher education: An interdisciplinary review and synthesis. *Interchange*, 1(1), 64–85. <https://doi-org.ezproxy.mtsu.edu/10.1007/BF0221431>
- State Collaborative on Reforming Education (2022). 2023 State of Education in Tennessee. https://tnscore.org/sdm_downloads/2023-state-of-education-in-tennessee/
- Tennessee Higher Education Commission. (n.d.). *Enabling the competitive edge: Tennessee higher education in the new economy*.
<https://www.tn.gov/content/dam/tn/thec/bureau/research/other-research/master-plan/finalmp.pdf>
- Tennessee Higher Education Commission. (2015). *Postsecondary Attainment in the Decade of Decision: The Master Plan for Tennessee Postsecondary Education 2015-2025*.
<https://eric.ed.gov/?q=source%3A%22Tennessee+Higher+Education+Commission%22&id=ED572992>
- Tennessee Reconnect. (n.d.). *About*. <https://tnreconnect.gov/Tennessee-Reconnect-Grant>
- Tinto, V. (1975). Dropout from Higher Education: A Theoretical Synthesis of Recent Research. *Review of Educational Research*, 45(1), 89–125.
<https://doi.org/10.3102/00346543045001089>

Welbeck, R. & Torres, R. (2019). The male student success initiative: Investing in the success of men of color. <https://eric.ed.gov/?id=ED599692>

Wladis, C., Hachey, A. C., & Conway, K. (2018). No time for college? An investigation of time poverty and parenthood. *Journal of Higher Education*, 89(6), 807–831. <https://doi.org/10.1080/00221546.2018.1442983>