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PREDICTING THE PERSISTENCE OF TRADITIONAL AND NONTRADITIONAL  
UNIVERSITY UNDERGRADUATES USING THE PSYCHOSOCIOCULTURAL MODEL

by

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A dissertation submitted in partial fulfillment of the requirements  
for the degree of Doctor of Philosophy  
in the Department of Educational Leadership and Higher Education  
in the College of Community Innovation and Education  
at the University of Central Florida  
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## **ABSTRACT**

Nontraditional students are increasingly more common in higher education but have lower persistence rates than their traditional peers. While educational researchers have developed several models to predict college persistence using both cognitive (e.g. entrance exam scores) and noncognitive (e.g. academic motivation) factors, most of these models were created for traditional students. The psychosociocultural (PSC) model was created to better predict academic outcomes specifically for underrepresented students using psychological, social, and cultural factors. However, the PSC model has never been used to study nontraditional students. To address these limitations, this study used the PSC model to predict the persistence of traditional and nontraditional undergraduate students at a large public research university. Students were considered nontraditional if they were 25 or older; worked an average of 30 or more hours a week; had children; or were enrolled part-time for the majority of the spring, summer, and fall semesters in 2019. It was hypothesized that (1) nontraditional students will have lower rates of persistence than traditional students; (2a) psychological, social, and cultural dimensions will predict persistence among all students; (2b) nontraditional students will have stronger relationships between the three PSC dimensions and persistence than traditional students; (3a) loneliness, self-efficacy, support from family and friends, comfort on campus, and sense of belonging will predict persistence among all students; and (3b) nontraditional students will have stronger relationships between the six variables of the PSC model and persistence than traditional students. Hypothesis 1 was tested using a chi square test of independence, and hypotheses 2 and 3 were tested using a binominal logistic regression. Preliminary analyses tested the data to determine the internal reliability for each instrument used as well as to determine whether the assumptions of the statistical tests were met. Data analysis revealed that none of the

hypothesis were supported. No difference in persistence was found between nontraditional and traditional students. Neither the three PSC dimensions nor the six PSC variables were significant predictors of persistence for the undergraduate participants. Finally, student status did not moderate the relationship between the three PSC dimensions and persistence or the six PSC variables and persistence. While this study did not find that the PSC Model was useful for predicting differences in persistence between nontraditional and traditional students, the lack of significant findings was likely due to a high persistence rate among all students. While the hypotheses could not be supported, the high internal reliability of the instruments suggested that the six instruments used in this study were particularly useful for understanding nontraditional students' experiences on campus. Additionally, this study measured nontraditional and traditional students' perceived experiences on campus, which may inform outreach and services provided by student service staff. Future studies on nontraditional students might consider using these instruments to gauge students' experiences on campus at other institutions. In gathering information about students' perceptions and experiences, institutions will be better able to make informed decisions about how their policies and practice meet the needs of various student groups on campus.

I dedicate this dissertation to my husband, Andy, who supported and encouraged me throughout my PhD journey so that I could fulfill my academic dreams. Thank you, love.

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## **CHAPTER ONE: INTRODUCTION**

Since 2011, nontraditional students have represented at least 74% of the undergraduate population in the United States (Radford, Cominole & Skomsvold, 2015). Although definitions vary, nontraditional students are commonly characterized as undergraduates who are aged 25 years or older, work 30 or more hours a week, have children, and/or enrolled in classes part-time (Chung, Turnbull, & Chur-Hansen, 2014; Langrehr, Phillips, Melville, & Eum, 2015). In 2017, 10% of full-time undergraduate students at four-year public institutions were older than 24 (NCES, 2019b) and 41% were employed (NCES, 2019c); employed students were more likely to own a house (57%), be married (59%), and have children (57%) (NCES, 2019c). Compared to full-time students, part-time students, 39% of whom were over the age of 24 (NCES, 2019b), were even more likely to work (83%), own a house (80%), be married (79%), and have children (79%) (NCES, 2019c). Nontraditional students are clearly a large part of the student population in higher education, with backgrounds and needs unique from traditional students.

While national policies and practices have aided the increase in the nontraditional student population (Baker & Velez, 1996; Brock, 2010; Eyre, 2013; Remenick, 2019; Swil, 2002), institutional practices consistently favor traditional students while nontraditional students continue to be ignored, marginalized, and devalued (Bowl, 2001; Mallman & Lee, 2016; 2017; Meuleman, Garrett, Wrench & King, 2015; Moses, 1990; Sims & Barnett, 2015). For students with obligations outside of college, academic expectations and opportunities may be secondary to other responsibilities, making it difficult to earn a degree (Bowl, 2001; Bohl, Haak, & Shrestha, 2017; Wardley, Bélanger, & Leonard, 2013). For instance, much of the institutional culture assumes that students prioritize their coursework and role as a student (Bowl, 2001; Brinthaup & Eady, 2014; Kasworm & Pike, 1994; Markle, 2015; Pelletier, 2010; Thompson-

Ebanks, 2017), but often nontraditional students' families and careers are equally demanding of their time and energy, thus leaving students feeling torn among their multiple roles (Goncalves & Trunk, 2014; Markle, 2015; Pelletier, 2010). In part because of barriers in the dominant college culture, nontraditional students largely feel that their needs are not considered, that they are discriminated against, and that they are not included in the college culture (Bohl et al., 2017; Boyd & Shea, 2015; Witkowsky, Mendez, Ogunbowo, Clayton, & Hernandez, 2016). Yet nontraditional students are an essential part of the higher education population in need of academic and support services (Brock, 2010).

In addition to the college environment, nontraditional students' lives outside of academia tend to hinder their persistence (Bean & Metzner, 1985; Jeffreys, 2007) such that nontraditional students' persistence and degree completion rates are lower than that of their traditional peers (Bergman, Gross, Berry, & Shuck, 2014; Miller, 2014; Shapiro, Dundar, Ziskin, Yuan, & Harrell, 2013). In the eight years between 2009 and 2017, only 16% of first-time, part-time undergraduate students at four-year public institutions completed their degree (Woodworth, 2019). However, other researchers have found nontraditional students' course persistence (Ellis, 2019; Tilley, 2014) and degree completion to be higher than traditional students' (McNeil, Ohland, & Long, 2016). Existing studies on persistence and degree completion for nontraditional students is both conflicting and insufficient (Miller, 2014; Shapiro et al., 2013; UPCEA, 2012).

The psychosociocultural model (PSC; Gloria & Rodriguez, 2000) can be used to understand the scope and impact of nontraditional students' experiences on their persistence. The PSC model examines three noncognitive dimensions that affect underrepresented students' academic careers: their perception of themselves, those around them, and their fit within the

university culture. As such, the model more holistically examines students' perspectives and experiences than previous models that seek to predict student persistence.

### Problem Statement

Research on undergraduate, nontraditional students in the United States has found that they often experience discrimination, marginalization, and isolation while on their college campus (Bohl et al., 2017; Englund, 2019; Lakin, Mullane, & Robinson, 2007; Mallman & Lee, 2016, 2017; Markle, 2015; Meyer, 2014; Sims & Barnett, 2015; Witkowsky et al., 2016). While a vast amount of research has noted that this is a common occurrence, there is a need to understand the scope and depth of these experiences.

Preliminary research indicates that noncognitive factors (e.g. loneliness, social support, cultural fit) may be more salient for nontraditional students' success than cognitive factors (e.g. academic performance and preparation) (Goncalves & Trunk, 2014). Yet few researchers have examined how students' noncognitive factors, or psychosocial dimensions, affect their persistence (Barbera, Berkshire, Boronat & Kennedy, 2017). More research is needed on this topic to better understand the scope of nontraditional students' perceived experiences, and furthermore, how those experiences relate to their persistence. The PSC model, by measuring students' psychological, social, and cultural experiences on campus, can be used to explore the extent to which students' noncognitive factors predict persistence, and determine if there is a difference between traditional and nontraditional students.

Finally, persistence in itself is not well-known for nontraditional students. About 77% of colleges and universities do not measure their nontraditional students' degree completion rates (UPCEA, 2012), let alone their persistence rates. And large national datasets, such as IPEDS (Integrated Postsecondary Education Data System) only recently, in 2019, included students



other than first-time full-time in their reports, such as first-time part-time and transfer students, subpopulations which are typically considered nontraditional students (Woodworth, 2019). Therefore, nontraditional students are often entirely left out of institution's measurement and reporting of student persistence and completion rates. This study intends to help fill the gap on nontraditional students' rate of persistence.

### Purpose Statement

The purpose of this study is to predict student persistence using a model that considers students' psychological traits, social interactions, and cultural experiences on campus. Although the PSC model was developed to study the experiences of underrepresented students, it will be tested with both traditional and nontraditional students to determine how these populations may be differentially affected by noncognitive factors that influence persistence.

### Hypotheses

Based on the psychosociocultural model and previous literature about traditional and nontraditional students, three hypotheses will be tested:

- Hypothesis 1. Nontraditional students will have lower rates of persistence than traditional students.
- Hypothesis 2a. Psychological, social, and cultural dimensions will significantly predict persistence among all students.
- Hypothesis 2b. Nontraditional students will have a stronger relationship between the three PSC dimensions and persistence than traditional students.

Hypothesis 3a. Loneliness, self-efficacy, support from family and friends, comfort on campus, and sense of belonging will significantly predict persistence among all students.

Hypothesis 3b. Nontraditional students will have a stronger relationship between the six variables in the PSC model and persistence than traditional students.

### Significance of the Study

This study made four significant contributions to the study of undergraduate, nontraditional students. First, there is little data on persistence of nontraditional students. Because national reporting standards only included first-time full-time students until 2019 (Woodworth, 2019), other students' population outcomes were effectively ignored (UCPEA, 2012). Therefore, there is a large dearth of knowledge on nontraditional students' persistence and graduation rates. The results of this study add to the literature on nontraditional students' persistence rates.

Second, this study measured the perceived experiences of nontraditional students to further understand the marginalization of nontraditional students. While it is known that nontraditional students experience discrimination, isolation, and marginalization (Bohl et al., 2017; Englund, 2019; Lakin et al., 2007; Mallman & Lee, 2016, 2017; Markle, 2015; Meyer, 2014; Sims & Barnett, 2015; Witkowsky et al., 2016), it is not well understood how widespread this issue is. Therefore, this study sought to quantify the psychosociocultural experiences of nontraditional students at a large public university.

Third, not only did this study quantify the experiences of nontraditional students, but it also compared the experiences of nontraditional students to their traditional peers. Nontraditional students' research findings are almost always compared to traditional students (e.g. Bye,

Pushkar, & Conway, 2007; Bohl et al., 2017; Dill & Henley, 1998; Wardley et al., 2013; Woods & Frogge, 2017), with good reason. Without a comparison population, there would be no reference point for gauging nontraditional students' experiences or persistence rates. This study therefore contributes to the body of literature that quantitatively compares traditional and nontraditional students' experiences in higher education.

Finally, after a review of the literature, Barbera, et al. (2017) concluded that there is a lack of research on psychosocial variables that contribute to persistence. While the psychosociocultural model examines the psychological, social, and cultural variables that contribute to persistence, the model has never been tested on the nontraditional student population. This study sought to validate the model for a new population and contribute to current literature on psychosociocultural variables that contribute to persistence.

### Delimitations

One delimitation of this study is that undergraduate students at only one university were examined. Presumably, each university has a different culture, which would affect students' response to the scales. Therefore, the study needs to be repeated at various institutions to capture students' noncognitive experiences at those institutions; as such, the results from this study at one university is not generalizable to other colleges or universities.

Furthermore, in this study, the three dimensions that comprise the psychosociocultural model are each composed of two noncognitive factors. Ideally, the psychological, social, and cultural dimensions would be represented by many factors. For instance, the psychological dimension could be composed of self-esteem, stress, anger, perfectionism, imposter syndrome, and other facets that represent all of the psychological factors affecting student persistence. For the scope of this study, however, it is not feasible to measure all facets of one's psychological,

social, and cultural experience. Therefore, two noncognitive factors for each dimension have been chosen for this study, based on prior research on traditional and nontraditional students.

Finally, many nontraditional students enroll in online programs and courses due to their many responsibilities and their need for flexible class schedules (Pontes et al., 2010). As this study seeks to understand the experiences of students *on campus*, it does not include students enrolled in online-only courses or programs. Therefore, based on this criterion, many nontraditional students enrolled at the university were not included in the study.

### Definition of Terms

The following terms are used throughout the manuscript.

Attrition. Attrition is defined as a student's departure or withdrawal from higher education, including permanent dropout or temporary stopout (Anderson, 1981; Bradburn, 2002).

College. A college is a four-year institution that primarily offers undergraduate degrees (NCES, 2019a). Since this study focuses on undergraduate students, the terms "college" and "university" are used interchangeably.

Cognitive factors. Cognitive factors are those factors that stem from one's cognitive abilities, such as academic performance and academic preparation (Messick, 1979).

Full-time student. A full-time student is an undergraduate enrolled in 12 or more credit hours in the fall and spring semesters or 9 or more credit hours in the summer semester (NCES, 2019a).

Noncognitive factors. Noncognitive factors are those factors that are external to one's cognitive abilities, such as loneliness, social support, or cultural fit (Messick, 1979).

Nontraditional student. Nontraditional students have been defined in many different ways (Chung et al., 2014), with most researchers using only age (over 24) to distinguish nontraditional

students from traditional students (Bean & Metzner, 1985; Langrehr et al., 2015; Tilley, 2014). For this study, a nontraditional student is defined as an undergraduate who has any one or more of the following characteristics: 25 years old or older, employed 30 or more hours a week, has children, and/or enrolled part-time.

Part-time student. A part-time student is an undergraduate enrolled in 11 or fewer credit hours in the fall and spring semesters or 8 or fewer credit hours in the summer semester (NCES, 2019a).

Persistence. Persistence is the continued enrollment in higher education leading to graduation (Arnold, 1999). In this study, persistence occurs when a student continues to enroll from one term to a later term, i.e., from Fall 2019 to Spring 2020 (IKM, 2019a; NCES, 2019a).

Retention. Retention is measured by a student who re-enrolls in courses the following year. The Department of Education measures retention for first-time degree-seeking undergraduates from the previous fall semester who re-enrolled in the current fall semester (NCES, 2019a).

Traditional student. A traditional student has all of the following characteristics: aged 24 or younger, employed less than 30 hours a week, has no children, and enrolled full-time.

Undergraduate. An undergraduate is a student who is enrolled at a college or university in order to obtain a bachelor's, associate's, or vocational degree (NCES, 2019a).

University. A university is a four-year institution that offers bachelor's, master's, and doctoral degrees (NCES, 2019a).

## **CHAPTER TWO: REVIEW OF THE LITERATURE**

### **Introduction**

This literature review explores current research on nontraditional college students. First is a review of three models that are used to predict undergraduate students' persistence. Given that nontraditional students may have different reasons for non-persistence, their unique characteristics are explored next, as well as why they are commonly overlooked when student needs are assessed. Finally, this literature review explores noncognitive factors that impact persistence for both traditional and nontraditional students and discusses specific noncognitive factors that are likely to predict retention for the nontraditional student population.

### **Theoretical Framework**

In the 1970s two researchers sought to understand why some students persisted in college while others departed - Vincent Tinto, a sociologist, and Astin Alexander, a psychologist. The theoretical framework for this study is drawn from the vast literature and theories on student persistence, beginning with Tinto's (1975) model of student departure and Astin's (1974, 1985, 1991) input-environment-outcome model, seminal research in the study of college student persistence.

#### **Tinto's Model of Student Departure and Astin's Input-Environment-Outcome Model**

Tinto's (1975, 1987) interactionalist model of student departure states that the more a student is integrated into the academic and social aspects of a college, the more likely they will persist to degree completion. Similarly, Astin's (1974, 1985, 1991) input-environment-outcome (IEO) model states that the more a student is actively involved in their academic career, the more likely they will persist in college. Both theories postulate that the amount and quality of effort one puts towards their education will enhance learning and persistence. Tinto's theory, however,

focuses more on sociological aspects of non-integration, stating that to successfully integrate in college, students must separate, transition, and incorporate themselves into a new academic life; conversely, a lack of integration in the academic environment arises from incongruence and isolation (Tinto, 1987). Astin's (1984) model, in contrast, tends to focus more on behavioral aspects of involvement, which can be seen in the five tenets of his theory: "(1) involvement refers to the investment of physical and psychological energy in various objects; (2) involvement occurs along a continuum; (3) involvement has both quantitative and qualitative features; (4) the amount of student learning and personal development is directly proportional to the quality and quantity of student involvement; and (5) the effectiveness of any educational policy or practice is directly related to its capacity to increase student involvement" (p. 519). While Astin's (1970, 1975) early work paved the way for future research on persistence, Tinto is more cited and well-known for research on student persistence (Metz, 2004).

Most immediate follow-up studies on Tinto's model in the late 1970s and early 1980s tended to focus on social rather than academic integration and were conducted with students who lived on-campus (Davidson & Wilson, 2013). Researchers at the time concluded that "[Tinto's] model has withstood careful scrutiny from the profession and has become accepted as the most useful for explaining the causes of student departure from higher education" (Boyle, 1989, p. 290). Yet Tinto's model is lacking in several areas. For instance, Tinto's model does not include the college's organizational characteristics that may affect students' social integration (Baird, 1988; Berger & Braxton, 1998), as student departure decisions can be linked to organizational characteristics such as the perceived fairness of institutional policies, the ability to participate in the decision-making process, and effective communication (Bean, 1980, 1983; Braxton & Brier, 1989). Other researchers have criticized Tinto's models for their lack of applicability to students

with diverse backgrounds (e.g. Attinasi, 1989; Castillo et al., 2006; Davidson & Wilson, 2013; Tierney, 1992), and Ashar and Skenes, (1993) found that the model only moderately explains nontraditional student retention. In response to the lack of generalizability of Tinto's model across populations, Bean and Metzner (1985) developed an attrition model based on the characteristics of nontraditional students.

#### Bean and Metzner's Conceptual Model of Undergraduate Nontraditional Student Attrition

Expounding upon Tinto's emphasis on the importance of academic integration, Bean and Metzner (1985) considered how integration might be more difficult for nontraditional students due to their limited time on campus. Therefore, their model focuses on students' environmental variables that are not directly related to academia, but still affect attrition and psychological outcomes for nontraditional students, such as one's hours of employment and family responsibilities. Bean and Metzner (1985) defined a student as nontraditional if they were older, enrolled part-time, and commuted to campus; however, they acknowledged that nontraditional students are exceedingly diverse and difficult to define.

In the conceptual model of undergraduate nontraditional student attrition, students' backgrounds tie in to their academic and environmental variables, which affect their academic and psychological outcomes. The variables, individually and in combination, affect students' intent to persist or dropout. However, unlike Tinto's model, Bean and Metzner's model does not include social integration as a direct effect of persistence. Bean and Metzner (1985) explicitly state, "The chief difference between the attrition process of traditional and nontraditional students is that nontraditional students are more affected by the external environment than by the social integration variables affecting traditional student attrition" (p. 485). While it may be true that nontraditional students are more affected by their external environments and are not as well



integrated into the dominant college culture, their social experiences on campus are nonetheless valid and worthy of study.

Chen (2012) criticized retention literature for focusing solely on the individual differences of students and effectively ignoring the role of the institution in students' persistence. Similarly, other researchers have recommended that the campus environment, such as comfort on the university campus, be added to models of persistence (e.g. Braxton, 2000; Castillo et al., 2006; Laden, Milem, & Crowson, 2000; Rendón, Jalomo, & Nora, 2000; Tanaka, 2002; Tierney, 1992). The three models described focus on what the student bring to the institution and how they act within it. None of the models focus on how the institution impacts students' experiences, behavior, or outcomes and therefore ignores any agency that the institution may have to impact students' success. Clearly, there is a need for a model that examines multiple facets of a students' experience on campus rather than focusing solely on their background variables, social integration, or external environment. Gloria and Rodriguez's (2000) psychosociocultural model does just that.

#### Gloria and Rodriguez's Psychosociocultural Model

The psychosociocultural model (PSC; Gloria & Rodriguez, 2000) examines three dimensions that relate to persistence: psychological, social, and cultural. Psychological factors encompass one's perceptions about themselves (e.g. loneliness and self-efficacy); social factors encompass one's perceived connection and relationships with others (e.g. family and friends); and cultural factors encompass one's perceptions of their place in the world around them (e.g. comfort on campus and sense of belonging). Especially for underrepresented groups, noncognitive factors are just as important and influential to persistence as cognitive factors (Robbins et al., 2004; Brown & Robinson Kurpius, 1997; Gloria & Rodriguez, 2000; Sedlacek &

Brooks, 1976; Tinto, 1982; Tracey & Sedlacek, 1984, 1985, 1989). Therefore, the PSC model was developed to more holistically examine and understand the noncognitive factors that influence persistence for various underrepresented populations. The PSC model posits that psychological, social, and cultural elements combine to influence college students' outcomes, such as persistence, adjustment, and well-being.

Originally developed for Latino students, the psychosociocultural model has been used to examine the experiences of other underserved and underrepresented student populations, including African Americans (Gloria, Robinson Kurpius, Hamilton, & Willson, 1999), Asian Americans (Gloria & Ho, 2003; Lin, Her, & Gloria, 2015), Chicanos (Gloria & Segura-Herrera, 2004), Latino/as (Castellanos, Gloria, Rojas Perez, & Fonseca, 2018; Chun et al., 2016; Gloria, Castellanos, Lopez, & Rosales, 2005; Delgado-Guerrero & Gloria, 2013; Gloria, Castellanos, Skull, & Villegas, 2009; Gloria & Rodriguez, 2000), Native Americans (Gloria & Robinson Kurpius, 2001; Thompson, Johnson-Jennings, & Nitzarim, 2013), veterans (Bodrog, Gloria, & Brockberg, 2018), and women (Dixon Rayle, Robinson Kurpius, & Arredondo, 2006). However, no studies have used the PSC model to examine nontraditional students, and only two studies have examined students with an average age over 24 (e.g. Bodrog, et al., 2018; Thompson et al., 2013).

Studies using the PSC model have generally found that underrepresented students' psychological, social, and cultural characteristics contribute significantly to their persistence decisions (e.g. Gloria & Robinson Kurpius, 2001; Gloria et al., 1999; Dixon Rayle et al., 2006). However, social support is often the strongest, if not the sole (Bodrog et al., 2018), predictor of student outcomes (Dixon Rayle et al., 2006; Gloria & Ho, 2003; Gloria & Robinson Kurpius, 2001; Gloria et al., 1999).

## Nontraditional Students

### Defined

Nontraditional students have been defined in many different ways (Chung et al., 2014), with most researchers using only age (over 24) to distinguish nontraditional students from traditional students (Bean & Metzner, 1985; Langrehr et al., 2015; Tilley, 2014). Other researchers have used the term “nontraditional” to denote minority or underrepresented populations, such as ethnic or racial minorities, women, caregivers, first generation students, transfer students, or students with disabilities (Langrehr et al., 2015). As such, the term “nontraditional” tends to become synonymous with “minority” and “traditional” with “majority” student populations (Ntiri, 2001).

Researchers Horn and Carroll (1996) defined nontraditional students by behaviors and choices made by the student rather than personal characteristics. The researchers defined nontraditional students by having any of seven characteristics: (1) delayed college enrollment by at least one year (therefore older than most students); (2) enrolled part-time; (3) has dependents other than a spouse, (4) is a single parent, (5) employed full-time; (6) financially independent; or (7) did not receive a traditional high school diploma. Because many nontraditional students have more than one of these characteristics (e.g. an adult learner who is employed full-time and financially independent), Horn and Carroll constructed a scale from zero to seven, giving students one point for each characteristic. Students with zero characteristics are traditional while nontraditional students are classified as minimally (one characteristic), moderately (two or three characteristics), or highly nontraditional (four or more characteristics).

While Horn and Carroll (1996) defined nontraditional students on a continuum, very few researchers use these criteria to define nontraditional students. Furthermore, many of the

characteristics are overlapping, such as financial independence and employment, and having dependents and being a single parent. Therefore, to reduce redundancy yet maintain common practice, a nontraditional student is defined in this study as an undergraduate student who has any one or more of the following characteristics: aged 25 or older, employed 30 or more hours a week, has children, and/or enrolled in classes part-time. In contrast, a traditional student has all of the following characteristics: aged 24 or younger, employed 29 or less hours a week, has no children, and enrolled full-time.

Perhaps the most defining feature of nontraditional students is the multiple roles that they fulfill (Dill & Henley, 1998; Giancola, Grawitch, & Borchert, 2009; Richter-Antion, 1986). The term ‘role’ has little definitional consensus, but can generally be defined as, “those behaviors characteristic of one or more persons in a context” (Biddle, 1979, p. 58). The competing demands hypothesis assumes that one’s roles demand all of their limited personal resources (Goode, 1960). When one’s roles are overly demanding and their resources are depleted, role conflict results (Goode, 1960). Role conflict is complex, is often great sources of stress, and affects persistence for nontraditional students (Markle, 2015).

Role conflict results from attempting to meet the demands of multiple “greedy institutions” that demand personal investment of one’s time, energy, and finances (Coser, 1974). Coser originally used the term “greedy institutions” to denote monks, Bolsheviks, Jesuits, and mothers/wives, but researchers latter applied the term to other institutions, such as the workplace, the family unit, and higher education (e.g. Home, 1993; Franzway, 2000; O’Driscoll, Ilgen, & Hildreth, 1992). At each institution, the person embodies a role that they organize and manage in their lives, as stated in role theory (Linton, 1936; Parsons, 1951; Parsons & Shils, 1951). When people embody multiple roles, they will prioritize these roles based on priority status and

obligations (Kim, Sax, Lee, & Hagedorn, 2010). However, students who are not able to cope with multiple competing and demanding roles are at risk of stress and dropout (Biddle, 1986; Giancola et al., 2009).

### Characteristics

Nontraditional students are different from their traditional peers in four primary ways: they are adult learners (aged 25 and older), work 30 or more hours a week, have children to care for, and/or are enrolled in their courses part-time. These characteristics affect nontraditional students in different ways, but each additional characteristic tends to increase one's likelihood of dropout (Choy, 2002).

#### Adult Learners

While nontraditional students have more responsibilities outside of their academic career, they also possess more “real-life” experience than traditional students (Bohl et al., 2017; Woods & Frogge, 2017). Nontraditional students tend to have a specific goal for obtaining their degree (Bohl et al., 2017), and their prior experience is often part of their motivation for returning to school.

Although adjusting to the academic expectations and culture can be difficult for adults who have been out of school for years (Lee, 2018), adult learners have been found to have good time management, a skill that they bring with them from their career or life experiences, and a requirement for balancing their multiple roles (Bohl et al., 2017; Heagney & Benson, 2017). Perhaps because of these skills and motivation to succeed, when compared to traditional students, nontraditional undergraduates have been found to have similar (Woods & Frogge, 2017) or higher GPAs (Carney-Crompton & Tan, 2002; Mohrweis, 2010). However, while some researchers have found slightly greater internal motivation in nontraditional students than

traditional students (Bye et al., 2007; Justice & Dornan, 2001), many researchers have found both types of student to have equal amounts of motivation to learn (Bye et al., 2007).

### Employed

Nontraditional students tend to develop time management skills as they learn to balance work and study (Hammes & Haller, 1983). These skills contribute to their resiliency in persisting to graduation (Heagney & Benson, 2017; Martinez, Bilges, Shabazz, Miller, & Morote, 2012). In general, working part-time, around 20 hours per week, can benefit students' academic achievement (Dundes & Marx, 2006), but working 30 hours or more can lead to increased stress, reduced academic success (King & Bannon, 2002; Mounsey, Vandehey, & Diekhoff, 2013; Pike, Kuh, & Massa-McKinley, 2008), and an increased risk of dropout (Hovdhaugen, 2015).

The difference between traditional and nontraditional students in terms of employment stems from the number of hours worked. Forbus, Newbold, and Mehta (2011) found that 58% of the nontraditional students surveyed were financially independent compared to 27% of traditional students. More specifically, Bye et al. (2007) found that nontraditional students were primarily supported by their own income, through loans or scholarships, or by their spouse while traditional students were primarily supported by their parents.

Although traditional students are typically considered to be completely financially dependent on their families, several studies have found that today's traditional students are working part-time (NCES, 2019c). Both student populations tend to work at least some hours each week, but nontraditional students tend to work more hours (Bye et al., 2007; Forbus et al., 2011; Woods & Frogge, 2017).

### Enrolled Part-time

For students with multiple roles and obligations, part-time enrollment is a way to manage their academic career as well as their other responsibilities. Bye et al. (2007) found that 38% of the nontraditional students in their study were enrolled part-time versus 17% of the traditional students. Nationally we see that adult learners tend to enroll part-time more frequently. Of students over 24 in Fall 2017 at four-year public institutions, 43% were enrolled part-time (compared to 57% of traditional-aged students) while only 10% were enrolled full-time (compared to 90% of traditional-aged students) (NCES, 2019b).

Students enrolled part-time tend to work more hours than students enrolled full-time (NCES, 2019c; Stallman, 2010). For part-time students who work full-time, greater emphasis is typically placed on their careers, such that students tend to think of themselves as employees first and students second (Horn, 1998). Furthermore, part-time students may not be integrated into the college culture and therefore not know about the support and resources available to help them succeed (Lee, 2018). As such, part-time students are at risk of reduced social connection and sense of belonging, and greater isolation and attrition rates (Jacoby, 2015; Lee, 2018).

### Have Children

Nontraditional students have obligations to their family in various forms that takes time away from their studies (Heagney & Benson, 2017). They are also two to three times as likely to have children as traditional students (NCES, 2019c). Finding childcare is an often-cited barrier to education (Bohl et al., 2017; Boyd & Shea, 2015; Lovell, 2014). Perhaps because of this, having young children has been found to be especially difficult and linked to higher rates of attrition for both traditional and nontraditional-aged parents (Lovell, 2014; Taniguchi & Kaufman, 2005). In contrast, parents with older children were found to have more motivation and be more

academically successful (Lovell, 2014). However, despite the challenges that student parents face in their academic careers, student parents persist to better their children (Lindsay & Gillum, 2019), creating a family culture that promotes and encourages learning (Wainwright & Marandet, 2010).

### Barriers and Challenges

In her seminal book on adult learners returning to college, Cross (1981) identified three types of barriers that adult learners face—institutional, situational, and dispositional barriers—which have been used as a framework for many studies on adult and nontraditional students’ experiences in higher education (e.g. Colvin, 2013; Deggs, 2011; Hyland-Russell & Groen, 2011; Osam, Bergman, & Cumberland, 2016). Institutional barriers are those that result from “practices and procedures that exclude or discourage working adults from participating in educational activities such as inconvenient schedules or locations, full-time fees for part-time study, inappropriate courses of study, and so forth” (p. 98). For instance, Goncalves and Trunk (2014) found that nontraditional students struggled with course times, course availability, and access to necessary resources such as computers and educational technology. As a result, the students felt both isolated and a poor fit in the institutional environment.

Second, situational barriers stem from “one’s situation in life at a given time such as job and home responsibilities” (p. 98). The decision to return to college may be difficult for nontraditional students with work and family obligations (Rendón Linares & Munoz, 2011). Time management and financial stress can be especially difficult for adults who are returning to college after many years (Forbus et al., 2011).

Third, dispositional barriers are “related to attitudes and self-perceptions about oneself as a learner” (p. 98). Dispositional barriers were further examined by Kasworm (2008), who



defined four emotional challenges which contribute to adult learners' student identity: "seeking entry to college; ongoing engagement in the learning environment; engagement in learning new knowledge, perspectives and beliefs; and gaining a place, position, voice, and sense of value in the higher education environment" (Deggs, 2011, p. 1544).

The multiple barriers that nontraditional students face may impact not only their persistence (Markle, 2015), but also their ability to access services (Heagney & Benson, 2017; Keith, 2007). Universities are poised to support the diverse population of students in higher education, yet continue to prioritize practice and policy that match the needs of traditional students (Bowl, 2001; Carey, 2005a, 2005b; Colvin, 2013; Kazis et al., 2007; Meyer, 2014; Philibert, Allen, & Elleven, 2008; Rabourn, BrckaLorenz, & Shoup, 2018). Brock (2010) said it eloquently: "One of the ironies in higher education is that institutions, such as Ivy League schools and highly selective liberal arts colleges, that enroll the best prepared and most traditional students tend to offer the most such guidance, while institutions that serve the least prepared and most nontraditional students tend to offer much less" (p. 119). Indeed, students who arguably need student services the most - those marginalized and not ingrained in the campus culture - have the most difficult time accessing those services (Sims & Barnett, 2015), in turn affecting their persistence (Crozier, Reay, Clayton, Colliander & Grinstead, 2008).

The persistence and graduation rates of nontraditional students, however, is not well known. In response to a lack of information or consensus on nontraditional students' graduation rates, Miller (2014) reviewed three national datasets to determine the degree completion rates reported for nontraditional students, defined as students over 24 years of age. Averaging the dataset results showed that the six-year completion rate for full-time students aged 24 and older ranged from 24.99–61% compared to 11.7–29.2% for part-time students. However, Miller noted

that not all students are enrolled only full-time or part-time throughout their college career. Rather, many students switch their enrollment status to accommodate personal, career, or academic situations. For students aged 25 and older with mixed enrollment, the six-year completion rate ranged from 33.9–40.7%. There are two major takeaways from Miller’s study: (1) there is a large gap in the degree completion rate between full-time and part-time students and (2) nontraditional students may be enrolled full-time, part-time, or have mixed enrollment (Miller, 2014; Taniguchi & Kaufman, 2005). Clearly, the issue of persistence and degree completion is complex and varies greatly by the data collected and students’ enrollment status.

### Noncognitive Factors that Impact Persistence

Noncognitive factors can be grouped into three categories: psychological, social, and cultural. The psychosociocultural model states that these three categories of noncognitive factors individually and collectively impact students’ persistence.

#### Psychological State

How students feel about themselves while in college colors their perceptions, experiences, and outcomes. While there are many psychological factors that affect students’ college experience—such as perceptions of imposter syndrome, stress, self-confidence, locus of control, anxiety, depression, and so on (Pritchard & Wilson, 2003)—students’ sense of loneliness and self-efficacy are two major psychological components that impact their persistence (Devonport & Lane, 2006; Gloria & Ho, 2003).

#### Loneliness

Loneliness can be defined as dissatisfaction resulting from unmet social and emotional needs (Leung, 2002; Neto & Barros, 2000). Although Tinto’s theory emphasizes the need for social integration, researchers have found conflicting results for how loneliness affects retention.

While McGaha and Fitzpatrick (2005) found that loneliness was not associated with dropout risk, others have shown that students who experience loneliness and isolation are more guarded in their communication (Leung, 2002), have difficulty adjusting to their campus, and have decreased rates of persistence (Gloria & Ho, 2003; Wentworth & Peterson, 2001).

Nontraditional students in particular have reported experiencing loneliness and isolation at their institution. A common theme in qualitative studies is a feeling of social alienation, with nontraditional students stating that they do not fit into the college culture, that they are keenly aware of the difference between themselves and the more traditional students around them, and that group projects with traditional students highlight the differences in their backgrounds and priorities (Bohl et al., 2017; Colvin, 2013; Englund, 2019; Goncalves & Trunk, 2014; Mallman & Lee, 2017; Thompson-Ebanks, 2017; Witkowsky et al., 2016). Nontraditional students often report feeling as though their peers lack an understanding of the multiple roles and responsibilities that they hold, and that even faculty are not able or willing to help (Brinthaupt & Eady, 2014; Markle, 2015; Thompson-Ebanks, 2017).

### Self-Efficacy

Self-efficacy is one's belief that they can complete the tasks necessary to meet their goals and desired outcomes (Bandura, 1977). Tinto has called self-efficacy "the foundation upon which student success is built" (Tinto, 2017, p. 3). Students with greater self-efficacy are more likely to persist in their academic careers (Devonport & Lane, 2006).

The nontraditional students that Quiggins et al. (2016) studied reported fairly high self-efficacy and responded positively to task-oriented questions. While they were less sure about their ability to receive high grades, they were more certain about their ability to complete a task, such as homework or a project. Carney-Crompton and Tan (2002) suggest that while traditional

students are “weeded out” through the rigors of college, nontraditional students self-select before they enter college, such that a high degree of motivation, drive, and self-efficacy is needed for nontraditional students to enter college, which helps them persist. Tinto (2017) however, states that self-efficacy is not a fixed trait; rather universities can help students foster it through timely support.

It could be that nontraditional students enter higher education with the self-efficacy to cope with educational barriers, a positive trait, as individuals who are more confident in their capacity to overcome barriers are more likely to do so (Corbière, Mercier, & Lesage, 2004). Similar to self-efficacy, coping efficacy is “the degree to which an individual possesses confidence in her or his ability to cope with or manage complex and difficult situations” (Luzzo & McWhirter, 2001, p. 62).

### Social Support

Because nontraditional students’ personal and family life is an instrumental aspect of their lives, social support from family and friends is one of the greatest predictors of their success (Chartrand, 1992). Support from family, friends, and even work colleagues has been shown to assist in adjustment to transition (Fass & Tubman, 2002), decrease role strain (Dyk, 1987; Heagney & Benson, 2017), reduce the need for on-campus support services (Bauman et al., 2004), alleviate educational challenges (Chao & Good, 2004), and impact persistence (Plageman & Sabina, 2010; Tinto, 2010). Without support systems, all students are less likely to succeed in their academic endeavors (Tinto, 2010).

#### Support from Family

While support from family is a large motivator to persist for both traditional and nontraditional student populations, the two student groups interact with and receive support from

their families in different ways. For example, in a study that compared traditional and nontraditional female students, Carney-Crompton and Tan (2002) found that traditional students cited their major sources of support as their boyfriend, grandparent, and parent while nontraditional students cited their spouse/partner and children as their greatest sources of emotional and instrumental support. These findings clearly display how traditional and nontraditional students are in different stages of life and therefore rely on different family members for support. For nontraditional students, who are typically older, have families, and financial responsibilities, their spouse and children are often their reason and motivating factor for going to college (Bohl et al., 2017) while traditional students are more likely to receive pressure from their parents to succeed (Dill & Henley, 1998). Families also often help nontraditional students balance their multiple roles by taking on some of their obligations, such as cooking, cleaning, or childcare, to reduce students' role strain and allow them to focus on their studies (Heagney & Benson, 2017). As such, approval and support from family is critical to their persistence (Plageman & Sabina, 2010).

#### Support from Friends

In a study of first-generation Asian American students, Lin et al. (2015) found that social support from friends was one of the strongest predictors of persistence. The researchers hypothesized that because the students were first-generation, it was possible that their families would not understand or be able to assist the students with their educational process, and so they had to rely on their friends for support. However, Gloria and Robinson Kurpius (2001) did not find any relationship between support from friends and persistence, although this could be because they did not specifically ask participants to consider only their college friends.

While social support is important to both traditional and nontraditional students, support from friends has greater impacts on traditional students' persistence (Wilcox, Winn, & Fyvie-Gauld, 2005). In a qualitative study of primarily (77%) traditional-aged students, Wilcox, Winn, and Fyvie-Gauld (2005) found that first-year undergraduates primarily withdrew due to lack of social support. Students' primary reasons for their intent to withdraw was their loneliness, not feeling a sense of belonging in any social group, or having their friends withdraw from the university. For the nontraditional-aged students, living off campus was a major source of their social isolation; however, forming a study group fostered support in their individual courses. Social engagement is important for all students but tends to be a lower priority for nontraditional students who have multiple responsibilities outside of their academic career (Lee, 2018).

#### Cultural Fit

The university environment shapes and is shaped by those who study, work, teach, and lead within it (Bronfenbrenner, 1979; Museus, 2016). A historical failure of higher education—and society—to create environments that foster success for *all* students has left certain groups marginalized in the academic culture and environment (Moses, 1990; Museus & Quaye, 2009; Tierney, 1992, 1999). While policies and practices have changed over time to include a more diverse student population (Pryor, Hurtado, Saenz, Santos, & Korn, 2007), much of the architecture and buildings remain the same.

Malcolm Knowles, recognized by many as the father of adult learning, noted the role of the campus environment in relation to adult students: “One can sense rather quickly on entering an institution, for example, whether it cares more about people or things, whether it is concerned about the feelings and welfare of individuals or herds them through like cattle, and whether it views adults as dependent personalities or self-directing human beings” (Knowles, 1980, p. 47).

As Knowles noted, the physical environment represents the university's mission and affects the way people interact within it (Fugazzotto, 2009). Those in higher education have a responsibility to their students to create environments in which they can develop and thrive (Banning & Kaiser, 1974; Hurtado, Milem, Clayton-Pedersen, & Allen, 1998).

### Comfort on Campus

Underrepresented students' negative perceptions of their university environment have been linked to feelings of isolation, marginalization, and alienation (Englund, 2019; Huffman, 1991; Gloria & Robinson Kurpius, 2001; Lin, LaCounte, & Eder, 1988). Similarly, students who perceived that their campus was unwelcoming or unsupportive were found to have less sense of belonging and higher rates of dropout (Ancis, Sedlacek, & Mohr, 2000; Cabrera, Nora, Terenzini, Pascarella, & Hagedorn, 1999; Gloria & Robinson Kurpius, 2001; Ponterotto, 1990; Rankin & Reason, 2005; Wentworth & Peterson, 2001). For instance, Pullins (2011) found that students who were satisfied with their campus climate were 50% more likely to persist than students who were dissatisfied.

Institutional barriers were the greatest threat to nontraditional students' persistence in a study by Quiggins et al. (2016). Students specifically felt a lack of community and wished for more support through a nontraditional student office, a mentoring program, or support groups (Quiggins et al., 2016). One nontraditional student that Salvant (2016) interviewed transferred from one university to another specifically because she felt that the first one lacked support and flexibility. In many qualitative studies, nontraditional students have decried the need for a supportive campus community (e.g. Colvin, 2013; Englund, 2019; Lee, 2018; Meyer, 2014; Quiggins, 2016; Salvant, 2016). A supportive campus environment, or lack thereof, can impact

students' intent to leave and ultimately their withdrawal (Barnett, 2008; Heagney & Benton, 2017; Markle, 2015; Salvant, 2016).

### Sense of Belonging

Sense of belonging is derived from a student's positive perception of their interactions with other students, faculty members, administrators, and staff (Barnett, 2008; Hurtado & Carter, 1966; Strayhorn, 2012; Tinto, 2017). In prior studies, sense of belonging was found to predict persistence for African American and White undergraduate students (e.g. Hausmann, Schofield, & Woods, 2007) and positively affect academic self-efficacy and emotional well-being in Latino/a undergraduates (e.g. Chun et al., 2016).

Along with a sense of loneliness, isolation, and alienation, nontraditional students often lack a sense of belonging on campus (Bohl et al., 2017; Colvin, 2013; Englund, 2019; Goncalves & Trunk, 2014; Lee, 2018; Thompson-Ebanks, 2017; Witkowsky et al., 2016). Nontraditional students often note that the campus culture is designed for traditional students, and that there is no space for them to converse with other nontraditional students or to seek support for their unique needs (Bohl et al., 2017; Lee, 2018; Meyer, 2014). Furthermore, while there are currently more nontraditional students enrolled in higher education than before, nontraditional students have great diversity in their backgrounds and life situations. One nontraditional student may be married and working full-time while another may be a caretaker for three young children and enrolled part-time. While these two students are both deemed "nontraditional", they may have very little in common. As such, nontraditional students are far more diverse than traditional students and may have more trouble finding other students with similar backgrounds.



## Conclusion

Part of what makes nontraditional students a unique population is the many roles they must fulfill in their academic lives, personal lives, and careers. Partly because of their role obligations, nontraditional students face more barriers and challenges than their traditional peers. Some of these barriers stem from the way that higher education institutions are structured, as well as the academic culture, which demands priority status from students. As such, nontraditional students feel lonely, isolated, and marginalized.

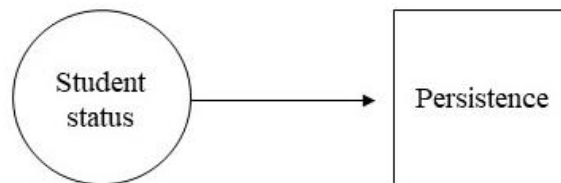
The campus social and cultural environment shapes the experience of students in college and impacts their outcomes while learning and working in that environment (Kuh, Kinzie, Schuh, Whitt, & Associates, 2011; Museus, 2014). As such, it is important to examine the differences between traditional and nontraditional students' experiences on campus, and how that affects their persistence. By operationalizing students' noncognitive factors, educators and administrators can adjust the environment to improve student success and reduce students' barriers (Strange & Banning, 2001, 2015). However, there is no research that systematically analyzes nontraditional students' psychosociocultural experiences using the psychosociocultural model and furthermore compares them to traditional students' experiences. Therefore, this study sought to fill in the stated gaps by using the PSC model to quantitatively operationalize and compare the perceived experiences of traditional and nontraditional students as it relates to their persistence.

## CHAPTER THREE: METHODS

### Research Design and Method

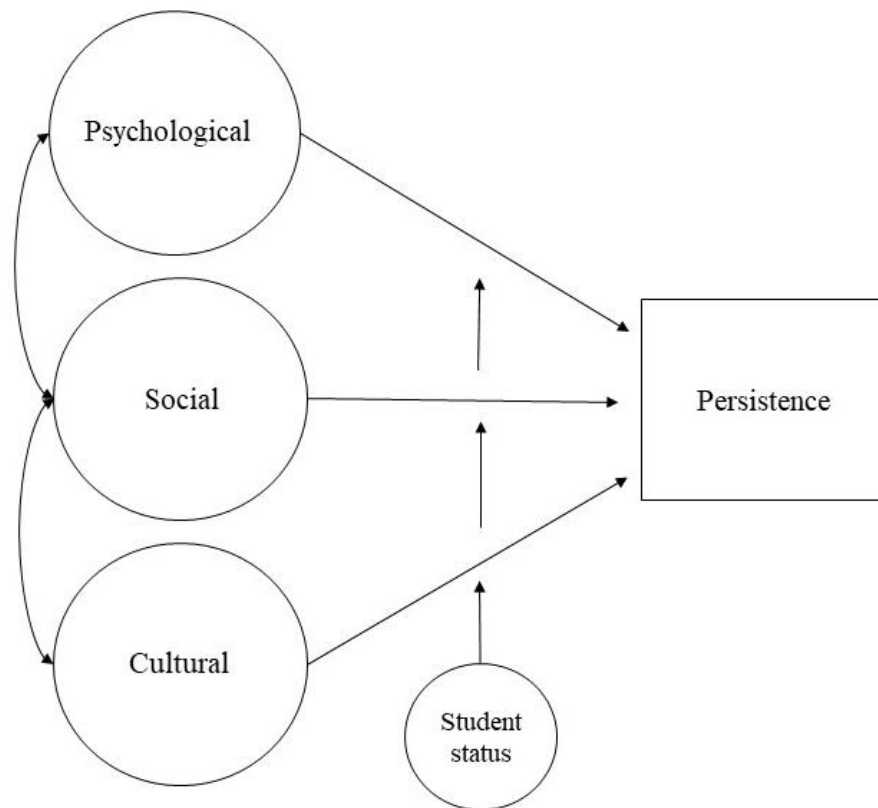
This study used a quantitative approach with three causal-comparative designs to test how student status and noncognitive factors affect student persistence. While qualitative research is useful to explore a phenomenon and understand the lived experiences of nontraditional students, it does not measure the amount and scope of nontraditional students' perspectives and experiences. Although causal-comparative studies limit the ability to make strong causal inferences, this methodology is most suitable for predicting persistence from students' psychological, social, and cultural factors in the university environment.

The figures below illustrate the designs for this study. The first hypothesis used a non-equivalent control group design to determine if nontraditional students have lower rates of persistence than traditional students. Figure 1 is as follows:



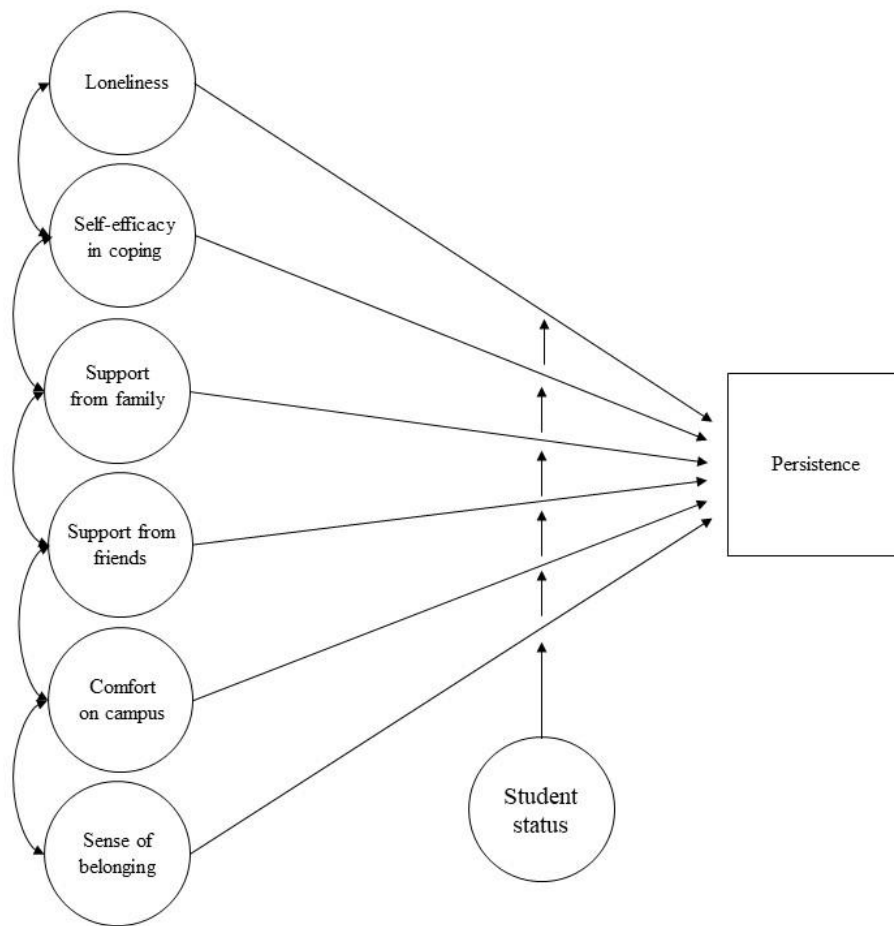
*Figure 1.* The design for hypothesis 1

The second two hypotheses were tested by aggregating the six noncognitive variables into the three psycho-social-cultural dimensions, which will be used as predictor variables. Student status was included as a moderator and persistence was the dependent variable. Figure 2 is as follows:



*Figure 2.* The design for hypothesis 2

The third two hypotheses were tested by modeling loneliness, self-efficacy, support from family, support from friends, comfort on campus, and sense of belonging as predictor variables; student status (nontraditional vs. traditional) as a moderator; and persistence as the dependent variable. Figure 3 is as follows:



*Figure 3.* The design for hypothesis 3

### Participants

The participants for this study were 192 undergraduate students from the University of Central Florida (UCF). UCF is a large, diverse, public four-year research university located in Orlando, Florida with 13 colleges and 99 degree programs (UCF, 2019). In fall 2019, the university enrolled 59,483 undergraduate students. Of new admits in summer and fall 2019, 51.4% were transfer students (UCF, 2019). Because this study sought to understand undergraduate students' experiences on campus, students in online-only degree programs were excluded (5.3% of all undergraduates), as well as students in their first year of study (25.5% of

all undergraduates) (UCF, 2019). UCF's six-year graduation rate was 72%, and 47.8% of its students were minorities (UCF, 2019).

The software G\*Power 3.1.9.2 was used to run a statistical power analysis to determine the number of participants necessary for this study. For design 1, at least 88 participants would be required to find a significant effect when using a Chi Square test with a moderate effect size (*Cramer's V* = .3),  $\alpha = .05$ , 80% power, and one degree of freedom. For design 2 and 3, at least 142 participants would be required when using a logistic regression with a small effect size ( $OR = 1.68$ ),  $\alpha = .05$ , 80% power, and a moderate effect size for other variables in the model ( $R^2 = .06$ ). Assuming the strong likelihood of a large non-response rate, 2,000 undergraduate students were invited to participate in this study. The potential participants were randomly sampled by UCF's Institutional Knowledge Management department once IRB approval was obtained (Appendix E).

Of the 2,000 participants invited to participate in the study, 222 responded to the demographic survey and instruments, resulting in an 11.1% overall response rate. However, five participants' responses were incomplete, five provided insufficient enrollment information to determine whether they were a part-time or full-time student, and 20 of the students graduated in the fall 2019 semester. Therefore, 192 participants, 9.6% of all students invited to participate, provided complete and usable responses for this study.

Overall, participants included slightly more women than men, with an average age of 22.63. The majority of participants were in their senior year of study and enrolled full-time with an average GPA of 3.40. A little less than half had transferred to UCF, with the majority of those transfers entering with an associate's degree. Participants were employed an average of 14.23 hours a week and the large majority did not have children. Of the nontraditional students, the

average age was 25.94, most were enrolled part-time, and about two-thirds had transferred to UCF. Nontraditional students worked an average of 22.85 hours per week and only five of the 72 nontraditional participants had any children. Of the traditional students, the average age was 20.64, about one third had transferred to UCF, and they worked an average of 9.05 hours per week. Detailed demographic information for all participants, nontraditional students, and traditional students is displayed in Table 1 and Table 2.

Table 1. Demographic Information of Participants – Gender, Level, Enrollment Status, and Transfer Status

	All Students		Nontraditional Students		Traditional Students	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Participants	192	100%	72	37.5%	120	62.5%
Gender						
Female	106	55.2%	40	55.6%	66	55%
Male	82	42.7%	32	44.4%	50	41.7%
Non-binary	2	1%	0	0%	2	1.7%
Transgender	1	.5%	0	0%	1	.8%
Agender	1	.5%	0	0%	1	.8%
Level						
Senior	111	57.8%	47	65.3%	64	53.3%
Junior	52	27.1%	20	27.8%	32	26.7%
Sophomore	28	14.6%	5	6.9%	23	19.2%
Freshman	1	.5%	0	0%	1	.8%
Enrollment						
Full-time	151	78.6%	31	43.1%	120	100%
Part-time	41	21.4%	41	56.9%	-	-
Transfer Status						
Transferred to UCF	88	45.8%	52	72.2%	36	30%
w. Associate's	65	74.7%	42	82.4%	23	63.9%
w. credits	20	23%	7	13.7%	13	36.1%
w. Bachelor's	1	2.3%	2	3.9%	0	0%

Table 2. Demographic Information of Participants - Age, GPA, Employment, and Children

	All Students ( <i>n</i> = 192)				Nontraditional Students ( <i>n</i> = 72)				Traditional Students ( <i>n</i> = 120)			
	<i>M</i>	Min	Max	<i>SD</i>	<i>M</i>	Min	Max	<i>SD</i>	<i>M</i>	Min	Max	<i>SD</i>
Age	22.63	18	54	5.02	25.94	19	54	6.86	20.64	18	24	1.30
Children	.10	0	3	.45	.26	0	3	.71	0	0	0	0
Employment*	14.23	0	60	13.81	22.85	0	60	15.42	9.05	0	27	9.60
GPA	3.40	2.00	4.00	.45	3.58	2.00	4.00	.47	3.45	2.10	4.00	.43

\*Employment is measured by hours worked each week

### Instruments

A battery of six standardized, pre-existing instruments was used to measure the variables of interest and demographic characteristics of the sample.

#### Demographic Information

Demographic information was collected to describe the sample and to determine if students were traditional or nontraditional. As such, students were asked to indicate their age, how many hours they work each week, their number of children, and their course enrollment status. Students' gender, class standing, grade point average (GPA), and transfer status were also included in the demographic survey to provide information about the generalizability of the sample to the population. A binary variable termed "student status" was created to distinguish traditional and nontraditional students. Students were classified as nontraditional if they were 25 or older; worked an average of 30 or more hours a week; had children; or were enrolled part-time for the majority of the spring, summer, and fall semesters in 2019.

#### Psychological Dimension

The psychological dimension that was tested in hypotheses 2a and 2b was created from an averaged composite score from the two psychological variables, loneliness and self-efficacy.

## Loneliness

The Revised UCLA Loneliness Scale (Russell, Peplau, & Cutrona, 1980) was created to measure students' satisfaction or dissatisfaction with their social relationships. The original long form (ULS-20) was developed into a short form (ULS-4) to reduce cognitive load on survey participants. However, Hays and DiMatteo (1987) contended that the four-item short form was too short and created an alternate eight-item short form (ULS-8). The ULS-8 has been found to be a better representative of the ULS-20 and is more reliable and valid (Hays & DiMatteo, 1987). Therefore, this was the version used for this study.

The Short Form UCLA Loneliness Scale (ULS-8; Hays & DiMatteo, 1987) consists of 8 items with Likert-type response options ranging from 1 to 4 with 1 being “never” and 4 being “often”. Two positively worded items include statements such as “I can find companionship when I want it,” while six negatively worded items include statements such as “I feel left out.” Reverse-scoring the positively worded items gives an overall score of 8 to 32, with a higher score indicating greater loneliness. The average score for all participants in this study was 17.77 ( $n = 192$ ,  $SD = 5.48$ ), indicating generally low levels of loneliness among participants. Nontraditional students had slightly lower scores of loneliness on average ( $n = 72$ ,  $M = 16.57$ ,  $SD = 5.81$ ) than traditional students ( $n = 120$ ,  $M = 18.49$ ,  $SD = 5.16$ ). The internal reliability (measured by Cronbach's alpha) on studies with undergraduate students ranges from .84 (Hays & DiMatteo, 1987; Wu & Yao, 2008) to .90 (Doğan, Çötök, & Tekin, 2011). The internal reliability for the ULS-8 in this study was .885 for all participants, .894 for nontraditional students, and .874 for traditional students.



### Self-efficacy in Coping

The Coping with Barriers Scale (CWB; Luzzo & McWhirter, 2001) measures students' efficacy in coping with barriers that may affect their career and educational goals. The CWB scale consists of two subscales: Career-Related Barriers (CRB; 7 items) and Education-Related Barriers (ERB; 21 items). Because the ERB is "considered more immediate and salient to respondents' current life situation" than the CRB (Luzzo & McWhirter, 2001, p. 63), the ERB is more relevant to this study, and the CRB will not be used. The ERB uses Likert-type response options ranging from 1 to 5, with 1 being "not at all confident" and 5 being "highly confident". Respondents are asked to rate their level of confidence in overcoming 21 educational barriers such as "lack of support from friends," "childcare concerns," and "having to work." Possible total scores range from 21 to 105, such that a higher score denotes greater perceived efficacy in coping with education-related barriers. The average score for all participants in this study was 72.96 ( $n = 191$ ,  $SD = 16.93$ ), indicating moderate perceived efficacy in coping with education-related barriers. Nontraditional students had slightly higher scores on average ( $n = 72$ ,  $M = 73.99$ ,  $SD = 17.32$ ) than traditional students ( $n = 119$ ,  $M = 72.34$ ,  $SD = 16.73$ ). Internal reliability for the scale ranges from .93 (Lopez & Ann-Yi, 2006; Luzzo & McWhirter, 2001) to .95 (Thompson et al., 2013). The internal reliability for the CWB-ERB for this study was .930 for all participants, .932 for nontraditional students, and .930 for traditional students.

### Social Dimension

The social dimension, tested in hypotheses 2a and 2b, was created from an averaged composite score from the two social variables, support from family and support from friends.

### Support from Family

The Perceived Social Support Inventory – Family (PSS-Fa; Procidano & Heller, 1983) measures one's belief that their family is meeting their needs for information, feedback, and support. The scale consists of 20 items with original response options including “yes”, “no”, and “don't know”. However, the response options were modified to range from 1 to 7, with 1 being “strongly disagree” and 7 being “strongly agree” to maintain consistency with the PSS-Fr in response format. Fifteen positively worded items include statements such as, “I rely on my family for emotional support,” and five negatively worded items include statements such as, “Most other people are closer to their family than I am”. Total possible scores range from 20 to 140, with higher scores indicating greater support from family. The average score for all participants in this study was 98.05 ( $n = 192$ ,  $SD = 25.11$ ), indicating participants had fairly high perceived support from their families. Nontraditional students had slightly higher scores of family support on average ( $n = 72$ ,  $M = 101.69$ ,  $SD = 27.46$ ) than traditional students ( $n = 120$ ,  $M = 95.87$ ,  $SD = 23.44$ ). Internal reliability ranges from .88 (Gloria & Ho, 2003) to .93 (Dixon Rayle et al., 2006) for the versions using the original item format. The internal reliability of the PSS-Fa for this study was .946 for all participants, .957 for nontraditional students, and .937 for traditional students.

### Support from Friends

The Perceived Social Support Inventory – Friends (PSS-Fr; Procidano & Heller, 1983) measures one's belief that their friends are meeting their needs for support, information, and feedback. Similar to the PSS-Fa, the scale consists of 20 items with original response options including “yes”, “no”, and “don't know”. Following Lin et al. (2015), the response options were modified to range from 1 to 7, with 1 being “strongly disagree” and 7 being “strongly agree,”

and instructions were altered to ask participants to consider only their friends in college. Sixteen positively worded items include statements such as, “My friends give me the moral support that I need,” and four negatively worded items include statements such as, “I feel that I’m on the fringe in my circle of friends”. Possible total scores range from 20 to 140, with higher scores indicating greater support from friends. The average score for all participants in this study was 91.51 ( $n = 192$ ,  $SD = 27.16$ ), indicating high perceived support from participants’ UCF friends. Nontraditional ( $n = 72$ ,  $M = 91.61$ ,  $SD = 27.13$ ) and traditional students ( $n = 120$ ,  $M = 91.44$ ,  $SD = 27.27$ ) had about equal average scores in regard to support from their UCF friends. Internal reliability ranges from .79 (Gloria & Ho, 2003) to .92 (Dixon Rayle et al., 2006) for the versions using the original item format, and .92 when the items were formatted with a Likert scale (Lin et al., 2015). The internal reliability of the PSS-Fr for this study was .958 for all participants, .958 for nontraditional students, and .958 for traditional students.

### Cultural Dimension

The cultural dimension, tested in hypotheses 2a and 2b, was created from an averaged composite score from the two cultural variables, comfort on campus and sense of belonging.

#### Comfort on Campus

The University Environment Scale (UES; Gloria & Robinson Kurpius, 1996) measures students’ comfort level at their university. The scale consists of 14 items with Likert-type response options ranging from 1 to 7, with 1 being “not at all true” and 7 being “very true.” Items on the scale include nine positively worded statements such as “I feel comfortable in the university environment,” and five negatively worded statements such as “I feel as if no one cares about me personally on this campus.” Possible total scores range from 14 to 98, with higher scores denoting greater comfort on campus. The average score for all participants in this study

was 69.07 ( $n = 192$ ,  $SD = 14.10$ ), indicating very high comfort on campus. Nontraditional students had slightly higher scores on average ( $n = 72$ ,  $M = 69.85$ ,  $SD = 14.32$ ) than traditional students ( $n = 120$ ,  $M = 68.60$ ,  $SD = 14.00$ ). Internal reliability for the scale typically ranges from .75 (Gloria, 1997) to .82 (Gloria & Ho, 2003; Gloria & Robinson Kurpius, 2001). The internal reliability of the UES for this study was .847 for all participants, .842 for nontraditional students, and .851 for traditional students.

### Sense of Belonging

The Sense of Belonging Scale was originally developed by Bollen and Hoyle (1990) to measure an individual's perception of group membership within any context. However, Hurtado and Carter (1997) adjusted the scale to fit the college context, which is the version that will be used for this study. The scale consists of three items: "I feel a sense of belonging to <name of institution>", "I am happy to be at <name of institution>", and "I see myself as part of the campus community". Likert-type response options range from 1 to 4, with 1 being "strongly disagree" and 4 being "strongly agree". Possible total scores range from 3 to 15 with higher scores indicating a greater sense of belonging. The average score for all participants in this study was 8.15 ( $n = 192$ ,  $SD = 2.62$ ), indicating moderately high sense of belonging. Nontraditional ( $n = 72$ ,  $M = 8.13$ ,  $SD = 2.53$ ) and traditional students ( $n = 120$ ,  $M = 8.16$ ,  $SD = 2.67$ ) had about average scores in terms of their sense of belonging. Internal reliability ranges from .89 (Hausmann et al., 2007) to .95 (Chun et al., 2016). The internal reliability of the Sense of Belonging Scale for this study was .935 for all participants, .953 for nontraditional students, and .925 for traditional students.

Internal reliability and average composite scores for each instrument is listed in Tables 3 and 4, respectively.

Table 3. Internal Reliability Results of the Instruments

Instrument	Internal Reliability*		
	All students ( <i>n</i> = 192)	Nontraditional students ( <i>n</i> = 72)	Traditional students ( <i>n</i> = 120)
ULS-8 (Loneliness)	.885	.894	.874
CWB-ERB (Self-Efficacy)	.930	.932	.930
PSS-Fa (Support from Family)	.946	.957	.937
PSS-Fr (Support from Friends)	.958	.958	.958
UES (Comfort on Campus)	.847	.842	.851
Sense of Belonging	.935	.953	.925

\*Internal reliability is measured using Cronbach's alpha.

Table 4. Mean Composite Scores for Each Instrument among All Students, Nontraditional Students, and Traditional Students

Instrument	Instrument Score Range*	Instrument Score Midpoint	Participants' Mean Composite Score		
			All students ( <i>n</i> = 192)	Nontraditional students ( <i>n</i> = 72)	Traditional students ( <i>n</i> = 120)
ULS-8 (Loneliness)	8 - 32	20	17.77	16.57	18.49
CWB-ERB (Self-Efficacy)	21 - 105	63	72.96	73.99	72.34
PSS-Fa (Support from Family)	20 - 140	80	98.05	101.69	95.87
PSS-Fr (Support from Friends)	20 - 140	80	91.51	91.61	91.44
UES (Comfort on Campus)	14 - 98	56	69.07	69.85	68.60
Sense of Belonging	3 - 15	9	8.15	8.13	8.16

\*For all instruments, a higher score denotes greater perception of experiencing that noncognitive factor.

### Persistence

A dichotomous variable was created to measure persistence, such that 0 represents students who did not re-enroll in classes the semester following assessment measurement and 1 representing students who did re-enroll. Enrollment data was obtained from UCF's Institutional

Knowledge Management department, from the names and student identification numbers provided by participants.

### Data Collection Procedures

#### Pilot Study

Prior to the main study, a convenience sampling procedure was used to recruit ten undergraduate students to participate in a pilot test to ensure that the instruments are appropriate for the population of study. Pilot tests allow researchers to find any flaws in their items and questions and help fit the instruments to the intended population (Collins, 2003). As part of the pilot test, the online demographic questions and instruments were distributed to participants, asking them to note errors, inconsistencies, or confusing wording. After completing each of the instruments described above, the participants were asked to provide feedback on the length, structure, and flow of the instrument (Appendix A). Feedback from the ten participants was used to improve the demographic survey and instruments for clarity and accuracy.

Based on participants' feedback from the pilot study, demographic questions were altered to be clearer and more inclusive. For example, the term "fifth-year senior" was changed to "super senior" to include students who take more than five years to complete their degree. Some instrument items were worded to be clearer as well, such as rewording the phrase, "Members of my family get good ideas about how to do things or make things from me" to "I give members of my family good ideas about how to do or make things" in the Perceived Social Support Inventory – Family and Friends. Based on feedback regarding length and flow, participants indicated that the social dimensions section was somewhat overwhelming. To address that issue, the two instruments were placed on separate pages in Qualtrics. The final demographic survey and instruments are located in Appendix B.

## Main Study

The final demographic survey and instruments were distributed to 2,000 undergraduate students via emails obtained from UCF's Institutional Knowledge Management department. Electronic distribution was used, as it tends to be the preferred method by college students (Shih & Fan, 2008), and providing the preferred mode of distribution has been shown to increase participation rates (Olson, Smyth, & Wood, 2012). Following the requirements for informed consent, participants were emailed an invitation to participate, along with a description of the study and a disclosure stating that their participation was voluntary and that their responses would remain confidential (UCF IRB, 2019; Appendix C). Once participants accepted the conditions for participating in the study by providing their name and student identification number, they were allowed to proceed to the demographic survey and six instruments (Appendix B). Participants' names and student identification number were required for participation and were used to determine enrollment the following semester. Students were sent a final reminder to participate in the study one week after their initial invitation (Appendix D).

Student names and identification numbers were sent to UCF's Institutional Knowledge Management unit with a request to identify participants who graduated in the fall 2019 semester and participants who enrolled in courses for the spring 2020 semester. Enrollment data were used to measure persistence and matched to the assessment responses. Graduation data were used to remove those participants who had not enrolled in the spring 2020 semester because they had graduated the previous fall semester. Once data were matched and cleaned, students' identifying information was deleted. All data will be stored in a secure location for five years, after which it will be properly disposed.

### Methods of Analysis

Preliminary analyses were conducted to (a) measure the reliability of the six assessments used to test hypotheses 2 and 3 and (b) test the statistical assumptions for the hypothesis tests. Cronbach's alpha was used to measure the internal consistency of each assessment. Coefficients above .7 was the criterion used to determine whether each instrument is reliable. Statistical assumptions for logistic regression were tested following the recommendations from Field (2013), prior to testing hypotheses 2 and 3. Multicollinearity was assessed by examining whether (a) any of the predictor variables correlated above .80, (b) the variance inflation factor (VIF) was substantially greater than 1, or (c) the tolerance statistics were below 0.2. Linear relationships between the predictor variables and the log odds were assessed by examining whether any interaction terms between the predictors and their logs were significant. A Hosmer-Lemeshow goodness-of-fit test indicated whether the models had acceptable fit.

To test hypothesis 1, a chi square test of independence determined whether there was a statistically significant difference in the persistence of traditional and nontraditional students. Hypotheses 2a and 2b used a binomial logistic regression in which persistence was regressed on the psychological, social, and cultural composite scores; and student status was included as a moderator. Hypotheses 3a and 3b were also tested using a binomial logistic regression, in which persistence was regressed on loneliness, self-efficacy, family support, friends' support, comfort on campus, and sense of belonging; and student status was included as a moderator.

### Summary

A causal-comparative research design was used to examine how student status, loneliness, coping efficacy, support from family and friends, comfort on campus, and sense of belonging influenced student persistence. Three hypotheses were proposed: (1) nontraditional



students have lower rates of persistence than traditional students; (2a) psychological, social, and cultural dimensions will predict persistence among all students; (2b) nontraditional students will have stronger relationships between the three PSC dimensions and persistence than traditional students; (3a) loneliness, self-efficacy, support from family and friends, comfort on campus, and sense of belonging will predict persistence among all students; and (3b) nontraditional students will have stronger relationships between the six variables of the PSC model and persistence than traditional students. A pilot study was implemented to clarify the instruments for this population of study. The revised instruments were electronically distributed to a randomly selected sample of 2,000 undergraduate students. Fall 2019 graduation data and spring 2020 enrollment data were obtained from students' academic records and matched to their assessment responses. Data was analyzed using non-parametric statistics in SPSS.

## CHAPTER FOUR: RESULTS

### Preliminary Analysis

Statistical assumptions were assessed prior to testing the hypotheses. Statistical assumptions for the logistic regressions used to test hypotheses 2 and 3 were tested for multicollinearity, linear relationships between the predictor variables and the log odds. Furthermore, a Hosmer-Lemeshow goodness-of-fit test was used with the logistic regression analysis to indicate whether the model had acceptable fit. The results of these tests are discussed in the corresponding section prior to the results of the hypothesis testing.

### Hypothesis 1

Hypothesis 1 stated that nontraditional students would have lower rates of persistence than traditional students. To test hypothesis 1, a chi square test of independence determined if there was a statistically significant difference in the persistence of traditional and nontraditional students. For hypothesis 1 testing, the assumptions of the chi-square test of independence were not met. While there is no reason to believe that the data is related, as the sample was randomly selected, two cells had an expected count of less than five (50%); therefore the second assumption of this test was not met.

The results showed that while traditional students were more than four times as likely to re-enroll in the spring 2020 semester than were nontraditional students, there was not a statistically significant difference in persistence rates between nontraditional and traditional students ( $LR(1) = 3.568$ ,  $OR = 4.403$ ,  $p = .105$ ). The majority of all participants re-enrolled in the spring 2020 semester (96.35%). Specifically, 93.1% of nontraditional and 98.33% of traditional student participants re-enrolled. Therefore, hypothesis 1 was not supported.

### Hypothesis 2a

Hypothesis 2a stated that the three PSC dimensions - psychological, social, and cultural dimensions - would significantly predict persistence among all students. Hypotheses 2a used a binomial logistic regression in which persistence was regressed on the psychological, social, and cultural composite scores; and student status was included as a moderator. The assumptions of multicollinearity and linearity of the logit were tested. Because the collinearity statistics of tolerance and variance inflation factor (VIF) were all close to 1, the first assumption of logistic regression was met. The second assumption of logistic regression was also met, as there was not a linear relationship between the predictor variables and the log odds. Finally, results from the Hosmer-Lemeshow goodness-of-fit test indicated that the model had acceptable fit ( $\chi^2(8) = 7.986, p = .435$ ).

The Likelihood Ratio test from the logistic regression indicated that the three PSC dimensions did not significantly predict participants' persistence ( $LR(3) = 1.241, p = .743$ ). The psychological, social, and cultural variables only accounted for 2.4% of the difference between those students who did and did not enroll in spring 2020. Although none of the variables are significant predictors of persistence, the odds ratios are presented in Table 5.

Table 5. Estimates for the Regression of the PSC Dimensions on Persistence

Variables in the Equation	$\beta$	$\chi^2$	$p$	$OR$
Psychological Dimension	.044	.914	.339	1.045
Social Dimension	.000	.000	.997	1.000
Cultural Dimension	.024	.189	.664	1.024

### Hypothesis 2b

Hypothesis 2b stated that nontraditional students would have a stronger relationship between the three PSC dimensions and persistence than traditional students. Hypotheses 2b used

a binomial logistic regression in which persistence was regressed on the psychological, social, and cultural composite scores; and student status was included as a moderator. The assumptions of multicollinearity and linearity of the logit were tested. Because the collinearity statistics of tolerance and VIF were all close to 1, the first assumption of logistic regression was met. The second assumption of logistic regression was also met, as there was not a linear relationship between the predictor variables and the log odds. Finally, results from the Hosmer-Lemeshow goodness-of-fit test indicated that the model had acceptable fit ( $\chi^2(8) = 9.483, p = .303$ ).

The Likelihood Ratio test from the logistic regression indicated that student status did not moderate the relationships between the three PSC dimensions and retention ( $LR(3) = 4.063, p = .255$ ). The PSC dimensions, student status, and the interactions accounted for 16.8% of the difference between those students who did and did not enroll in spring 2020. The moderating variable, student status, alone accounted for 14.4% of the difference in students' persistence.

Table 6 summarizes the results of hypothesis 2b testing.

Table 6. Estimates for the Relationship between the PSC Dimensions and Student Status on Persistence

Variables in the Equation	$\beta$	$\chi^2$	$p$	$OR$
Psychological Dimension	-.004	.004	.951	.996
Social Dimension	-.001	.003	.957	.999
Cultural Dimension	.092	1.791	.181	1.097
Student Status	4.054	.317	.573	57.620
Psychological Dimension * Student Status	.091	.778	.378	1.095
Social Dimension * Student Status	.042	.731	.393	1.043
Cultural Dimension * Student Status	-.260	2.532	.112	.771

### Hypothesis 3a

Hypothesis 3a was tested using a binomial logistic regression, in which persistence was regressed on the six variables in the PSC model - loneliness, self-efficacy, family support,

friends' support, comfort on campus, and sense of belonging. Hypothesis 3a stated that the six PSC variables would significantly predict persistence among all students. Not all of the assumptions were met for hypothesis 3a. Tolerance and VIF were all close to 1, therefore, the first assumption of logistic regression was met. As one interaction between the variable 'sense of belonging' and the log odds was significant, the second assumption of logistic regression, assumption of linearity of the logit, was not met. Additionally, results from the Hosmer-Lemeshow goodness-of-fit test indicated that the model did not have acceptable fit ( $\chi^2(8) = 17.568, p = .025$ ).

The Likelihood Ratio test from the logistic regression indicated that the six PSC variables were not significant predictors of whether or not participants enrolled in the spring 2020 semester ( $LR(6) = 5.078, p = .534$ ). The explanatory variables (loneliness, self-efficacy, family and friend support, comfort on campus, and sense of belonging) only accounted for 9.7% of the difference in persistence. Table 7 summarizes the results of hypothesis 3a testing.

Table 7. Estimates for the Regression of the Six PSC Variables on Persistence

Variables in the Equation	$\beta$	$\chi^2$	$p$	$OR$
Loneliness	-.132	1.366	.243	.877
Self-Efficacy in Coping	.021	.690	.406	1.021
Support from Family	.006	.098	.755	1.006
Support from Friends	-.020	.735	.391	.981
Comfort on Campus	.031	.744	.388	1.031
Sense of Belonging	-.257	1.355	.244	.773

### Hypothesis 3b

Hypothesis 3b was tested using a binomial logistic regression, in which persistence was regressed on the six PSC variables; and student status was included as a moderator. Hypothesis 3b stated that nontraditional students would have a stronger relationship between the six

variables in the PSC model and persistence than traditional students. Not all of the assumptions were met for hypothesis 3b. Tolerance and VIF were all close to 1, therefore, the first assumption of logistic regression was met. As one interaction between the variable ‘sense of belonging’ and the log odds was significant, the second assumption of logistic regression, assumption of linearity of the logit, was not met. Finally, results from the Hosmer-Lemeshow goodness-of-fit test indicated that the model had acceptable fit ( $\chi^2(8) = 9.775, p = .281$ ).

Student status did not moderate the relationships between the six PSC variables and persistence ( $LR(6) = 4.906, p = .556$ ). None of the interaction variables within the model were significant. Table 8 summarizes the results of hypothesis 3b testing.

Table 8. Estimates for the Relationship between the Six PSC Variables and Student Status on Persistence

Variables in the Equation	$\beta$	$\chi^2$	$p$	$OR$
Loneliness	-.159	.953	.329	.853
Self-Efficacy in Coping	-.008	.038	.846	.992
Support from Family	.003	.013	.908	1.003
Support from Friends	-.015	.232	.630	.985
Comfort on Campus	.065	1.446	.229	1.067
Sense of Belonging	-.271	1.073	.300	.762
Student Status	-2.051	.022	.882	.129
Loneliness * Student Status	.130	.190	.663	1.139
Self-Efficacy in Coping * Student Status	.090	1.736	.188	1.094
Support from Family * Student Status	.061	1.328	.249	1.063
Support from Friends * Student Status	-.025	.130	.718	.975
Comfort on Campus * Student Status	-.106	1.113	.292	.899
Sense of Belonging * Student Status	.032	.003	.955	1.032

### Summary

Data analysis found that none of the hypotheses were supported. When considering all students, neither the PSC dimensions nor all six PSC variables were significant predictors of

persistence. Furthermore, student status did not moderate the relationship between either the three PSC dimensions and persistence or the six PSC variables and persistence.

## **CHAPTER FIVE: DISCUSSION AND CONCLUSION**

### Discussion

None of the three hypotheses were supported by the data. However, several limitations of the study made it difficult to for the Psychosociocultural Model to differentiate between the two student populations, nontraditional and traditional students.

### Limitations

The primary limitation of this study was the extremely high percentage of students who re-enrolled in the spring 2020 semester (96.5% for all participants). As the persistence rate for those who participated in the study was 93.1% for nontraditional students and 98.33% for traditional students, a lack of variability in the dependent variable made it difficult to find any significant differences between the two populations or any relationships between the PSC variables and persistence. Furthermore, this lack of variability may also have been why some statistical assumptions were not met and increased the likelihood of making a Type 2 error. Any violations of the tests are a threat to statistical conclusion validity.

While the high persistence rate in this study poses multiple issues, UCF's persistence rate from fall 2019 to spring 2020 for all degree-seeking undergraduate students was 93.2% (IKM, 2020). Such a high overall persistence rate makes the 96.5% persistence rate for all student participants more reasonable given the context. Furthermore, a major aim of the study was accomplished – to add to the literature on nontraditional students' persistence rates.

A high persistence rate in this study could also be due to response bias of the participants. Of those who were randomly selected to receive the questionnaires, it is likely that those students who completed the assessments were more likely to persist than those who did not (Wolbring & Treischl, 2016). Those students who participated did so during a very busy time in the semester



and may have been better able to manage their time or may have been more invested in college, both of which could affect the response and outcome. This possibility is supported by the fact that the invitations and reminders for the demographic survey and instruments were sent out at the end of the fall semester, which often coincides with final exams and term project deadlines. When the survey invitation and reminders were sent out, the researcher received several notes from students stating that they were busy with employment, finishing their coursework, studying for exams, or dealing with other life events, but noted that they would still try to find time to take the demographic survey and instruments. Perhaps students who were less prepared for their exams and managing multiple responsibilities at the end of the semester were less inclined to spend their precious time completing the assessments.

It is further likely that students who felt they would not be returning the in the spring 2020 semester, due to poor grades or extenuating circumstances, were not inclined to answer questions about their experiences as a student at UCF (Wolbring & Treischl, 2016). If so, this points to non-response bias because those students who did respond to the demographic survey and instruments potentially consisted of a separate population from those who did not (Vogt, 2005). Non-response bias is likely to affect the external validity of the study, limiting the results' generalizability to the larger population.

Although non-response bias may have affected the results of this study, the response rate for this study was typical. Of the 2,000 students invited to take the demographic survey and instruments, ultimately 222 students responded and 192 provided usable responses. Therefore, the response rate was 11.1% for all responses and 9.6% for usable responses. A response rate of 10-19% is common for online surveys (Deutskens, de Ruyter, Wetzels, & Oosterveld, 2004; Gajic, Cameron, & Hurley, 2012; Manfreda, Bosnjak, Berzelak, Haas, & Vehovar, 2008; Shih &

Fan, 2008). Although the power analyses conducted prior to the study indicated that at least 88 participants were needed for hypothesis 1 and at least 142 participants were needed for hypotheses 2 and 3 to obtain a significant effect, these assumed that the effect sizes would be moderate. Even with  $n = 192$ , no relationship was significant since all of the effect sizes were trivial ( $.77 < OR < 1.10$ ; Chen et al., 2010).

As this is a causal-comparative study, predictions but not strong causal inferences were made. Issues with internal validity include other potential causes for student persistence. While this study examined six variables that relate to persistence, other variables that were not measured may have contributed to persistence rates. Variables such as class performance, access to resources, course preparation, and other confounding variables could have contributed to students' persistence. The internal validity of the study is compromised because other confounding variables that potentially impacted the dependent variable were not measured.

Finally, the results of this research may not generalize to other PSC models because of the select constructs and measures chosen for this study. The six variables that comprised the PSC dimensions were chosen based on previous literature on nontraditional and traditional students and previous studies using the PSC Model. For instance, self-efficacy has been used extensively as a variable in the psychological dimension (Chun et al., 2016; Delgado-Guerrero & Gloria, 2013; Edman & Brazil, 2007; Gloria & Ho, 2003; Gloria & Robinson, 2001; Gloria et al., 1999; Thompson et al., 2013), as has social support from friends and family in the social dimension (Delgado-Guerrero & Gloria, 2013; Dixon Rayle et al., 2006; Gloria & Ho, 2003; Gloria & Robinson Kurpius, 2001; Gloria et al., 1999; Lin et al., 2015), and comfort on campus for the cultural dimension (Castellanos et al., 2018; Delgado-Guerrero & Gloria, 2013; Dixon Rayle et al., 2006; Edman & Brazil, 2007; Gloria et al., 2005; Gloria et al., 2009; Gloria & Ho,

2003; Gloria & Robinson Kurpius, 2001; Gloria et al., 1999; Lin et al., 2015). However, had different constructs been used for the psychological, social, and cultural dimensions, it is very likely that the results would have been different. For instance, variables that have comprised the psychological dimension in prior studies using the PSC Model include self-beliefs, perfectionism, imposter syndrome (Lin et al., 2015), forgiveness, anger, coping (Castellanos et al., 2018), stress (Bodrog et al., 2018; Delgado-Guerrero & Gloria, 2013) and self-esteem (Dixon Rayle et al., 2006; Gloria et al., 2009; Gloria & Ho, 2003; Gloria & Robinson Kurpius, 2001; Gloria et al., 1999; Lin et al., 2015). Other variables used in the social dimension include parental encouragement (Lin et al., 2015), perceived cohesion (Delgado-Guerrero & Gloria, 2013), mattering, and connectedness (Bodrog et al., 2018), and mentoring (Dixon Rayle et al., 2006; Gloria & Ho, 2003; Gloria & Robinson Kurpius, 2001; Gloria et al., 1999; Lin et al., 2015). Other variables used in the cultural dimension include college environmental stress (Gloria et al., 1999), community support, separation and alienation (Thompson et al., 2013), and cultural congruity (Castellanos et al., 2018; Chun et al., 2016; Delgado-Guerrero & Gloria, 2013; Dixon Rayle et al., 2006; Edman & Brazil, 2007; Gloria & Ho, 2003; Gloria & Robinson Kurpius, 2001; Gloria et al., 2005; Gloria et al., 2009; Gloria et al., 1999; Lin et al., 2015). Because the variables used in this study may not generalize to other PSC Models, this is a threat to external validity.

### Secondary Findings

Although this study primarily served to test the three hypotheses, additional tests that were used to inform the hypotheses provided valuable information. Secondary findings include the results of the internal reliability among the instruments and the results of the composite score

garnered from each instrument. This section describes these findings as well as their significance to the study.

#### Measures of Internal Consistency for Each Instrument

While this was not a psychometric study, the internal consistency for each measure was estimated for each sample to determine the suitability of the instruments for this study (Table 3). Although validity and reliability have previously been established for traditional students for the six instruments used,—the ULS-8, CWB-ERB, PSS-Fa, PSS-Fr, UES, and Sense of Belonging Scale—prior to this study, it was not clear that these instruments were suitable for nontraditional students. Measures of internal consistency using this sample indicated that all six instruments were reliable for both nontraditional and traditional students. Reliability coefficients for each sample were between .842 and .958. However, many of the instruments had greater internal reliability for the nontraditional students than traditional students, indicating that while they were useful instruments for examining both groups, they were particularly useful for measuring nontraditional students' experiences. Therefore, these instruments can reliably be used in future studies to examine both traditional and nontraditional students.

#### Average Composite Scores for Each Instrument

In addition to comparing the internal reliability of the instruments for all students, nontraditional students, and traditional students, the average composite score for each group was measured (Table 4). In obtaining the average score of each instrument for both student groups, two core aims of the study were met: (a) to measure the perceived experiences of nontraditional students and (b) to compare the experiences of nontraditional and traditional students.

Hays and DiMatteo (1987), creators of the Short Form UCLA Loneliness Scale (ULS-8), reported a mean composite loneliness score of 16.30 for university students in southern

California. Wu and Yao (2008) found a mean composite score of 17.57 for Taiwanese university students. This study found scores of 16.57 for nontraditional students and 18.49 for traditional students, below the midpoint (20) of the range of possible scores. Nevertheless, while many qualitative studies have identified loneliness as a major component of nontraditional students' academic careers (Bohl et al., 2017; Colvin, 2013; Englund, 2019; Goncalves & Trunk, 2014; Mallman & Lee, 2017; Thompson-Ebanks, 2017; Witkowsky et al., 2016), the students in this study did not report high rates of loneliness.

In regards to self-efficacy in coping with educational barriers, Luzzo and McWhirter (2001) reported a mean composite score of 85.77 for undergraduate students at a small southern university. This study found nontraditional students to generally report fairly high self-efficacy, similar to Quiggins et al. (2016), as both nontraditional ( $M = 73.99$ ) and traditional ( $M = 72.34$ ) students scored above the midpoint (63) in the range of possible scores. As Carney-Crompton and Tan (2002) suggested, it could be that the students who participated in this study—primarily seniors who had already succeeded to their final year as an undergraduate student—were successful as their peers were “weeded out” throughout their academic career.

Support from family generally differs among nontraditional and traditional students, with nontraditional students receiving greater family support from their spouse and children, and traditional students receiving greater family support from their parents and grandparents (Bohl et al., 2017; Carney-Crompton & Tan, 2002; Dill & Henley, 1998). As nontraditional students tend to rely on their families to maintain or take over their other roles in order to manage their student role (Heagney & Benson, 2017), support from their family is likely an especially important aspect of succeeding in their academic careers. Alternatively, support from friends tends to be more integral to traditional students' persistence rates (Wilcox, Winn, & Fyvie-Gauld, 2005).

Authors of the Perceived Social Support Inventory, Procidano and Heller (1983) did not report mean composite scores for their study on the PSS-Fa or PSS-Fr. However, in this study both nontraditional and traditional students scored above the midpoint (80) for the possible range of scores for support from both family (NTS  $M = 101.69$ ; TS  $M = 95.87$ ) and friends (NTS  $M = 91.61$ ; TS  $M = 91.44$ ), suggesting that both groups felt supported by family and friends.

The perceived campus environment can impact students' intent to persist (Barnett, 2008; Heagney & Benton, 2017; Markle, 2015; Salvant, 2016), and this study found similar levels of perceived comfort on campus for both nontraditional and traditional students. Gloria and Robinson Kurpius (1996) found a mean composite score of 64.49 for undergraduate university students. This study found a mean composite score of 69.85 for nontraditional students and 68.60 for traditional students; both scores are above the midpoint (56) of possible scores for comfort on campus.

Finally, students' sense of belonging was about equal for both groups. Both nontraditional ( $M = 8.13$ ) and traditional ( $M = 8.16$ ) students scored slightly below the midpoint (9) of possible scores for sense of belonging.

Overall, none of the scores for nontraditional or traditional students were found to be extraordinarily high or low. This is perhaps a heartening finding, as neither group is suffering from great loneliness or from a lack of self-efficacy, support from friends or family, comfort on campus, or sense of belonging. Furthermore, this study found that both groups reported similar scores on all assessments, suggesting that the two groups are not terribly different from one another in regards to the variables studied. These secondary findings further serve to support the results of the hypotheses testing, which generally found no difference between nontraditional and traditional students.

### Recommendations for Further Study

While this study was the first to use the PSC Model to predict persistence for nontraditional and traditional students, further research could build on this study in several ways. First, the PSC Model could be adjusted and used to predict other student outcomes. Second, future studies could directly compare the resulting scores of traditional and nontraditional students. Third, researchers could continue to explore and add to the currently meager research on nontraditional student persistence.

### Using the PSC Model

While this study found no evidence to conclude that the PSC Model may be useful in predicting the persistence of nontraditional students or determining differences between nontraditional and traditional students, this one study should not dissuade researchers from using the PSC Model for similar purposes in the future. The PSC Model is flexible in that it allows researchers to predict student outcomes using variables that comprise the psychological, social, and cultural dimensions.

Greater variability in the dependent variable would likely lead to reduced violation of statistical assumptions as well as a greater ability to examine differences between populations. At universities in which the persistence rate is high, researchers might consider focusing on other dependent variables in order to improve variability in the data. The PSC Model has been used to examine how students' psychological, social, and cultural experiences on campus affect their GPA (Chun, Marin, Schwartz, Pham, & Castro-Olivo, 2016; Edman & Brazil, 2009), college adjustment (Bodrog, Gloria, & Brockberg, 2018), coping (Gloria, Castellanos, & Orozco, 2005), and well-being (Castellanos, Gloria, Rojas Perez, & Fonseca, 2018; Chun, Marin, Schwartz,

Pham, & Castro-Olivo, 2016; Gloria, Castellanos, & Orozco, 2005; Gloria, Castellanos, Scull, & Villegas, 2009).

Aside from using the PSC Model to predict various outcomes, future researchers could use different variables and instruments to comprise the PSC dimensions as well. This study used loneliness and self-efficacy in coping with educational barriers as two variables that formed the psychological dimension because they fit with prior research on the populations of interest. Researchers might consider other variables, however, such as personality factors, resilience, or motivation. Similarly, researchers could use the same variables, loneliness and self-efficacy, but different instruments to measure them. Part of the beauty of the PSC Model is its adaptability to fit the population of study.

#### Comparing Traditional and Nontraditional Students

Aside from using the PSC Model, future research might also explore the nuanced differences between nontraditional and traditional students' perceived experiences on campus. While this study was successful in gauging each group's levels of select noncognitive factors, much more could be explored. For instance, while research has generally reported loneliness among nontraditional students (e.g. Bohl et al., 2017; Colvin, 2013; Englund, 2019; Goncalves & Trunk, 2014; Mallman & Lee, 2017; Thompson-Ebanks, 2017; Witkowsky et al., 2016), little research has compared the levels of loneliness between nontraditional and traditional students. Future studies could explore various differences in loneliness between the two groups, such as the source of loneliness for these two groups, how the groups' loneliness are similar or different, and how institutions might implement support services to serve the needs of their students who are experiencing loneliness. A deep dive into each variable examined in this study, as well as



comparisons between nontraditional and traditional students' responses would serve to expand the understanding of these student groups.

### Exploring Nontraditional Student Persistence

Finally, as there is a lack of information on the persistence of nontraditional students in general, future studies could explore the persistence rates of nontraditional students at other institutions. This would be relatively easy to do if an institution has a unit that manages student data. A researcher would simply ask the unit to provide persistence information on select students – those who fit the nontraditional student definition. A comparison between nontraditional and traditional students' rate of persistence would provide further information about how the two groups compare. Studies could use this information in conjunction with various instruments to determine if any of the variables—such as noncognitive or cognitive factors—impact the persistence of these two groups. This research would allow institutions to better understand how persistence is impacted similarly or differently for the two student groups. Doing so might help raise the persistence rates for each student group by providing institutions with information to adjust their support systems to cater to each group.

### Implications

The internal consistency of the six instruments used in this study (ULS-8, CWB-ERB, PSS-Fa, PSS-Fr, UES, and the Sense of Belonging Scale) were found to be high for both traditional and nontraditional students. Therefore, researchers of nontraditional students should feel confident in using these instruments to examine the experiences of nontraditional as well as traditional students.

Large metropolitan research universities may use the results of this study to generalize to their student population. Both traditional and nontraditional students reported levels of

loneliness, self-efficacy, support from family and friends, comfort on campus, and sense of belonging around the midpoint of possible scores. This suggests that these experiences are not overwhelming for both groups, but are felt to some extent. Student support staff interested in reducing students' loneliness and increasing their self-efficacy, support from family and friends, comfort on campus, and sense of belonging may employ various outreach methods or targeted programs. As this study found that nontraditional and traditional students' scores were not all that different on the six noncognitive factors studied, student support staff may not need to target the two groups differently.

This study explored the experiences of nontraditional and traditional students at one university. As the culture of each institution is different according to various factors such as the student population, size, location, organizational setup, policies, and leaders (Bronfenbrenner, 1979; Museus, 2016), ideally, each institution would assess their students to determine each sub-population's unique needs and adjust their practices accordingly. Understanding nontraditional and traditional students' perceived experiences on campus as well as the similarities and differences between them allows institutions of higher education to adjust their policies and practices to better fit these two different student populations. For instance, if support from family is perceived to be greater for nontraditional students than traditional students, student services may use this information as a way to reach out to nontraditional students – by involving the students' families in on-campus activities or providing resources to reduce the burden on the students' families, such as childcare and transportation. Alternately, if traditional students are not receiving enough support from their families, they may need support from other sources. Institutions of higher education have the vital responsibility to foster environments that allow

their students to flourish and succeed (Banning & Kaiser, 1974; Hurtado, Milem, Clayton-Pedersen, & Allen, 1998).

### Conclusion

While traditional undergraduate students are widely studied in higher education literature, nontraditional undergraduates—those students who are 25 or older, work an average of 30 or more hours a week, have children, or are enrolled part-time—are given less consideration although they comprise a majority of today's student population. Because of their unique characteristics, nontraditional students have different needs and goals for higher education than do their traditional peers, and therefore experience their education in a different way as well. Most institutions of higher education have yet to adjust their practices to this unique population, which some researchers have found leads to lower persistence rates for nontraditional students compared to traditional students. Other researchers have found a general lack of information regarding the persistence and academic success of nontraditional students. Therefore, this study sought to examine the differences in persistence for nontraditional and traditional students. The Psychosociocultural Model was used to examine the ways in which the two student groups are differentially affected by noncognitive factors that influence persistence.

Data analysis revealed that not only was there no difference in persistence rates between traditional and nontraditional students, the PSC Model did not predict persistence either. This finding is potentially due to a high persistence rate for all students in the sample. However, the instruments used in this study were found to have high internal consistency for both traditional and nontraditional students, so researchers should feel comfortable using these instruments in exploring the two student groups in future studies. This study also successfully gauged the

collective psychological, social, and cultural experiences of nontraditional and traditional students.

While these findings may generalize to large metropolitan research universities, other institutions would need to assess their students to understand how to best meet their needs. By understanding the unique needs of each group, institutions can adjust their resources, services, outreach, policies, and practices to best serve their students.

## **APPENDIX A: PILOT STUDY DEMOGRAPHIC SURVEY AND INSTRUMENTS**

## Default Question Block



Hello! You are invited to participate in a pilot study for my dissertation!

In this study, I ask that you provide feedback throughout the survey regarding any errors, inconsistencies, or confusing wording. At the end of the survey, I will ask for your comments regarding the length, structure, and flow of the survey. This information allows me to craft a better survey instrument for my dissertation study.

**\*\*Your feedback in the comment boxes at the end of each question section is what I need for this pilot study. You need to read the survey questions to provide feedback on them, but you do not need to respond to them. \*\***

The purpose of my dissertation study is to understand the differences in traditional and nontraditional students' persistence by exploring UCF students' psychological, social, and cultural experiences in their academic careers.

The survey takes approximately 10 minutes to complete. It includes questions which primarily ask about your experiences as an undergraduate student at UCF.

By selecting "I agree", you agree to participate in this pilot test. Your participation is voluntary, and you may stop taking the survey at any time. All answers will remain confidential and secure.

If you have any questions or concerns, please contact:

Lauren Remenick Maroon  
PhD Candidate  
Higher Education and Policy Studies  
Department of Educational Leadership and Higher Education  
College of Community Innovation and Education  
[Lauren.Maroon@ucf.edu](mailto:Lauren.Maroon@ucf.edu)

I agree to participate

I do not want to participate

**Block 1**

Please provide your information for each statement below.

Age

Gender

Female

Male

Transgender

Non-binary

Other

I prefer to not say

Class standing

Freshman

Sophomore

Junior

Senior

Fifth-year Senior

Overall Grade Point Average (GPA) at UCF

Your course enrollment status throughout your time at UCF

Always full-time (12+ credit hours in fall and spring, 9+ credit hours in summer)

Mostly full-time

Mixed (about 50% full-time and 50% part-time)

Mostly part-time

Always part-time (less than 12 credit hours in fall and spring, less than 9 credit hours in summer)

Number of children (if none, please enter "0")

The total number of hours you are employed each week, including jobs on and off campus (if none, please enter "0")

#### Your transfer status

Began college education at UCF

Transferred to UCF from another college or university

Transferred credits to UCF, but not considered a transfer student

Regarding the prior section of questions, please comment on whether the statements and response options make sense to you. Also note any errors, inconsistencies, or confusing items.

## Block 2

Indicate how often you feel the way described in each of the following statements.

	Never	Rarely	Sometimes	Always
I lack companionship.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There is no one I can turn to.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am an outgoing person.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel left out.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel isolated from others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can find companionship when I want it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am unhappy being so withdrawn.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People are around me but not with me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please rate your degree of confidence that you could overcome each potential education barrier below.

	Not at all confident	Somewhat confident	Confident	Mostly confident	Highly confident
Money problems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of financial support	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Having to work while I go to school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



	Not at all confident	Somewhat confident	Confident	Mostly confident	Highly confident
Family problems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Negative family attitudes about college	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Relationship concerns	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of support from my significant other to pursue education	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Childcare concerns	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My desire to have children	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Not fitting in at college	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of support from friends to pursue my educational aspirations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of support from teachers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of role models or mentors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Not being smart enough	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Not being prepared enough	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Not knowing how to study well	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Not having enough confidence	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My gender	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People's attitudes about my gender	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My ethnic background	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People's attitudes about my ethnic background	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Regarding the prior section of questions, please comment on whether the statements and response options make sense to you. Also note any errors, inconsistencies, or confusing items.

### Block 3

The following statements refer to feelings and experiences that occur to most people at one time or another in their relationships with their families. Please indicate your level of agreement with the following statements.

	Strongly disagree	Disagree	Somewhat disagree	Neither	Somewhat agree	Agree	Strongly agree
My family gives me the moral support I need.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I get good ideas about how to do things or make things from my family.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Strongly disagree	Disagree	Somewhat disagree	Neither	Somewhat agree	Agree	Strongly agree
Most other people are closer to their family than I am.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I confide in the members of my family who are closest to me, I get the idea that it makes them uncomfortable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My family enjoys hearing about what I think.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Members of my family share many of my interests.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Certain members of my family come to me when they have problems or need advice.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I rely on my family for emotional support.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There is a member of my family I could go to if I were just feeling down, without feeling funny about it later.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My family and I are very open about what we think about things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My family is sensitive to my personal needs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Members of my family come to me for emotional support.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Members of my family are good at helping me solve problems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have a deep sharing relationship with a number of members of my family.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Members of my family get good ideas about how to do things or make things from me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I confide in members of my family, it makes me uncomfortable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Members of my family seek me out for companionship.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think that my family feels that I'm good at helping them solve problems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I don't have a relationship with a member of my family that is as close as other people's relationships with their family members.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I wish my family were much different.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The following statements refer to feelings and experiences that occur to most people at one time or another in their relationships with friends. Please indicate your level of agreement with the following statements, and consider only your friends at UCF.

Strongly disagree	Disagree	Somewhat disagree	Neither	Somewhat agree	Agree	Strongly agree
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	Strongly disagree	Disagree	Somewhat disagree	Neither	Somewhat agree	Agree	Strongly agree
My UCF friends give me the moral support I need.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most other people are closer to their UCF friends than I am.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My UCF friends enjoy hearing about what I think.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Certain UCF friends come to me when they have problems or need advice.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I rely on my UCF friends for emotional support.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I felt that one or more of my UCF friends were upset with me, I'd just keep it to myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel that I'm on the fringe in my circle of UCF friends.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There is a friend at UCF I could go to if I were just feeling down, without feeling funny about it later.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My UCF friends and I are very open about what we think about things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My UCF friends are sensitive to my personal needs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My UCF friends come to me for emotional support.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My UCF friends are good at helping me solve problems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have a deep sharing relationship with a number of friends at UCF.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My UCF friends get good ideas about how to do things or make things from me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I confide in my friends at UCF, it makes me feel uncomfortable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My UCF friends seek me out for companionship.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think that my UCF friends feel that I'm good at helping them solve problems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I don't have a relationship with a friend at UCF that is as intimate as other people's relationships with friends at UCF.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I've recently gotten a good idea about how to do something from a friend at UCF.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I wish my UCF friends were much different.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Regarding the prior section of questions, please comment on whether the statements and response options make sense to you. Also note any errors, inconsistencies, or confusing items.

**Block 4**

Please respond to these next statements using the following scale:

	Not at all true	2	3	4	5	6	Very true
Class sizes are so large that I feel like a number.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The library staff is willing to help me find materials / books.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
University staff have been warm and friendly.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not feel valued as a student on campus.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Faculty have not been available to discuss my academic concerns.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Financial aid staff have been willing to help me with financial concerns.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The university encourages / sponsors underrepresented student groups on campus.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There are tutoring services available for me on campus.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The university seems to value underrepresented students.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Faculty have been available for help outside of class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The university seems like a cold, uncaring place.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Faculty have been available to help me make course choices.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel as if no one cares about me personally on this campus.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel comfortable in the university environment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please indicate your level of agreement with the following statements.

	Strongly disagree	Disagree	Agree	Strongly agree
I see myself as part of the UCF campus community.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9/21/2019

Qualtrics Survey Software

	Strongly disagree	Disagree	Agree	Strongly agree
I feel that I am a member of the UCF campus community.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel a sense of belonging to the UCF campus community.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Regarding the prior section of questions, please comment on whether the statements and response options make sense to you. Also note any errors, inconsistencies, or confusing items.

Regarding the **overall survey**, please provide feedback on the overall length, structure, and flow of the survey.

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## **APPENDIX B: MAIN STUDY DEMOGRAPHIC SURVEY AND INSTRUMENTS**



## Default Question Block



Hello!

You are being invited to take part in a research study. Whether you take part is up to you.

The purpose of this study is to understand the differences in traditional and nontraditional students' persistence by exploring UCF students' psychological, social, and cultural experiences in their academic careers.

This online survey includes questions that primarily ask about your experiences as an undergraduate student at UCF. It takes approximately ten minutes to complete.

There are no foreseeable risks in participating in this study. While there are no direct benefits to you, we hope that future students will benefit from the findings and potential policy changes that may develop from those findings.

Your participation in this study is voluntary. You are free to withdraw your consent and discontinue participation in this study at any time without prejudice or penalty. Your decision to participate or not participate in this study will in no way affect your relationship with UCF, including continued enrollment, grades, employment or your relationship with the individuals who may have an interest in this study.

To determine if your experiences are linked to your persistence, we would like to obtain your enrollment data next semester. Providing your NID allows us to obtain this from UCF's Institutional Knowledge Management department. Your NID will be deleted after analysis while your survey responses and re-enrollment data will remain confidential and stored on a password-protected computer for five years, after which they will be deleted.

You must be 18 years of age or older to take part in this research study.

Study contact for questions about the study or to report a problem: If you have questions, concerns, or complaints, please contact:

Lauren Remenick Maroon

PhD Candidate

Higher Education and Policy Studies

12/14/2019

Qualtrics Survey Software

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*IRB contact about your rights in this study or to report a complaint: If you have questions about your rights as a research participant, or have concerns about the conduct of this study, please contact Institutional Review Board (IRB), University of Central Florida, Office of Research, 12201 Research Parkway, Suite 501, Orlando, FL 32826-3246 or by telephone at (407) 823-2901, or email [irb@ucf.edu](mailto:irb@ucf.edu).*

**Please provide your NID to continue to the survey. Thank you!**

NID

### Block 1

Please provide your information for each statement or question below.

Age

Gender

Female

Male



Transgender

Non-binary

Other

I prefer to not say

Class standing (based on credits completed)

Freshman (0-29 credits)

Sophomore (30-59 credits)

Junior (60-89 credits)

Senior (90+ credits)

Graduate Student (beyond a bachelor's degree)

Thank you for participating, but only undergraduate students are needed for this study.

Overall Grade Point Average (GPA) at UCF

Number of children (if none, please enter "0")

The average number of hours you are employed each week, including jobs on and off campus (if none, please enter "0")

Did you transfer to UCF?

Yes

No

How did you transfer in?

Transferred with associate's degree

Transferred with credits, but no degree

Other (please explain)

What is/was your enrollment status for the following semesters?

Fall 2019	<input type="text"/>	▼
Summer 2019	<input type="text"/>	▼
Spring 2019	<input type="text"/>	▼

## Block 2

Below are statements that may or may not describe how you feel at UCF. Please indicate how often (never, rarely, sometimes, or always) you feel the way described in each of the following statements.

	Never	Rarely	Sometimes	Always
I lack companionship.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There is no one I can turn to.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am an outgoing person.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel left out.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel isolated from others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can find companionship when I want it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am unhappy being so withdrawn.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People are around me but not with me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please rate your degree of confidence that you could overcome each potential education barrier below.

	Not at all confident	Somewhat confident	Confident	Mostly confident	Highly confident
Money problems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of financial support	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Having to work while I go to school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Family problems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Negative family attitudes about college	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Relationship concerns	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of support from my significant other to pursue education	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Childcare concerns	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My desire to have children	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Not fitting in at college	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of support from friends to pursue my educational aspirations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of support from teachers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of role models or mentors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Not being smart enough	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Not at all confident	Somewhat confident	Confident	Mostly confident	Highly confident
Not being prepared enough	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Not knowing how to study well	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Not having enough confidence	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My gender	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People's attitudes about my gender	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My ethnic background	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People's attitudes about my ethnic background	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### Block 3

The following statements refer to feelings and experiences that most people experience at one time or another in their relationships with their families. Please indicate your level of agreement with the following statements.

	Strongly disagree	Disagree	Somewhat disagree	Neither	Somewhat agree	Agree	Strongly agree
My family gives me the moral support I need.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I get good ideas about how to do things or make things from my family.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most other people are closer to their family than I am.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I confide in the members of my family who are closest to me, I feel that it makes them uncomfortable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My family enjoys hearing about what I think.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Members of my family share many of my interests.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Certain members of my family come to me when they have problems or need advice.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I rely on my family for emotional support.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There is a member of my family I could go to if I were just feeling down, without feeling uncomfortable about it later.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My family and I are very open about what we think about things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My family is sensitive to my personal needs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Members of my family come to me for emotional support.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Members of my family are good at helping me solve problems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Strongly disagree	Disagree	Somewhat disagree	Neither	Somewhat agree	Agree	Strongly agree
I have a deep sharing relationship with a number of members of my family.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I give members of my family good ideas about how to do or make things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I confide in members of my family, it makes me uncomfortable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Members of my family seek me out for companionship.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think that my family feels that I'm good at helping them solve problems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I don't have a relationship with a member of my family that is as close as other people's relationships with their family members.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I wish my family were much different.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The following statements refer to feelings and experiences that most people experience at one time or another in their relationships with friends. Please indicate your level of agreement with the following statements, and consider only your friends at UCF.

	Strongly disagree	Disagree	Somewhat disagree	Neither	Somewhat agree	Agree	Strongly agree
My UCF friends give me the moral support I need.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most other people are closer to their UCF friends than I am.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My UCF friends enjoy hearing about what I think.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Certain UCF friends come to me when they have problems or need advice.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I rely on my UCF friends for emotional support.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I felt that one or more of my UCF friends were upset with me, I'd just keep it to myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel that I'm on the fringe in my circle of UCF friends.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There is a friend at UCF I could go to if I were just feeling down, without feeling uncomfortable about it later.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My UCF friends and I are very open about what we think about things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My UCF friends are sensitive to my personal needs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My UCF friends come to me for emotional support.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Strongly disagree	Disagree	Somewhat disagree	Neither	Somewhat agree	Agree	Strongly agree
My UCF friends are good at helping me solve problems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have a deep sharing relationship with a number of friends at UCF.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I give my UCF friends good ideas about how to do things or make things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I confide in my friends at UCF, it makes me feel uncomfortable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My UCF friends seek me out for companionship.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think that my UCF friends feel that I'm good at helping them solve problems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I don't have a relationship with a friend at UCF that is as intimate as other people's relationships with friends at UCF.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I've recently gotten a good idea about how to do something from a friend at UCF.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I wish my UCF friends were much different.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

#### Block 4

Please respond to these next statements using the following scale:

	Not at all true	2	3	4	5	6	Very true
Class sizes are so large that I feel like a number.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The library staff is willing to help me find materials / books.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
University staff have been warm and friendly.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not feel valued as a student on campus.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Faculty have not been available to discuss my academic concerns.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Financial aid staff have been willing to help me with financial concerns.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The university encourages / sponsors underrepresented student groups on campus.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There are tutoring services available for me on campus.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The university seems to value underrepresented students.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



	Not at all true	2	3	4	5	6	Very true
Faculty have been available for help outside of class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The university seems like a cold, uncaring place.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Faculty have been available to help me make course choices.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel as if no one cares about me personally on this campus.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel comfortable in the university environment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please indicate your level of agreement with the following statements.

	Strongly disagree	Disagree	Agree	Strongly agree
I see myself as part of the UCF campus community.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel that I am a member of the UCF campus community.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel a sense of belonging to the UCF campus community.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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## **APPENDIX C: INITIAL INVITATION TO UCF STUDENTS**

## Invitation to Participate in My Dissertation Survey

Lauren Maroon

Wed 11/13/2019 11:30 AM

To: Lauren Maroon <lauren.maroon@Knights.ucf.edu>

Dear Lauren,

I am emailing to ask for your help with my dissertation study on undergraduate student persistence.

The purpose of my dissertation study is to understand the differences in students' persistence by exploring UCF students' psychological, social, and cultural experiences in their academic careers. Only with your participation can I learn more about this.

The survey takes approximately 10 minutes to complete. It includes questions that primarily ask about your experiences as an undergraduate student at UCF.

Click here to take the survey: [Take the Survey](#)

Or copy and paste the URL: [http://ucf.qualtrics.com/jfe/form/SV\\_3wTLyjMtO4ce4AZ?Q\\_DL=7O55pEAQS00s8W9\\_3wTLyjMtO4ce4AZ\\_MLRP\\_a5yrPrSZoniUBhz&Q\\_CHL=email](http://ucf.qualtrics.com/jfe/form/SV_3wTLyjMtO4ce4AZ?Q_DL=7O55pEAQS00s8W9_3wTLyjMtO4ce4AZ_MLRP_a5yrPrSZoniUBhz&Q_CHL=email)

For questions about the study, please contact:

Lauren Remenick Maroon

PhD Candidate

Higher Education and Policy Studies

Department of Educational Leadership and Higher Education

College of Community Innovation and Education

[Lauren.Maroon@ucf.edu](mailto:Lauren.Maroon@ucf.edu)

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Tim Letzring, JD, EdD

Professor

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Department of Educational Leadership and Higher Education

College of Community Innovation and Education

[Tim.Letzring@ucf.edu](mailto:Tim.Letzring@ucf.edu)



## **APPENDIX D: FINAL REMINDER TO UCF STUDENTS**

## Final Request to Participate in My Dissertation Survey

Lauren Maroon

Wed 11/13/2019 11:30 AM

To: Lauren Maroon <lauren.maroon@Knights.ucf.edu>

Lauren,

One week ago I emailed to ask for your help with my dissertation study on undergraduate student persistence. This is my final request for you to complete the survey. Your participation is extremely important for the completion of my dissertation.

The survey takes about 10 minutes to complete. It includes questions that primarily ask about your experiences as an undergraduate student at UCF. Your participation is voluntary, and you may stop taking the survey at any time. All answers will remain confidential and secure.

Follow this link to take the survey: [Take the Survey](#)

Or copy and paste the URL: [http://ucf.qualtrics.com/jfe/form/SV\\_3wTLyjMtO4ce4AZ?Q\\_DL=2mbofGndU6FJVt3\\_3wTLyjMtO4ce4AZ\\_MLRP\\_b3m2cbPk1QuVkvH&Q\\_CHL=email](http://ucf.qualtrics.com/jfe/form/SV_3wTLyjMtO4ce4AZ?Q_DL=2mbofGndU6FJVt3_3wTLyjMtO4ce4AZ_MLRP_b3m2cbPk1QuVkvH&Q_CHL=email)

For questions about the study, please contact:

Lauren Remenick Maroon  
PhD Candidate  
Higher Education and Policy Studies  
Department of Educational Leadership and Higher Education  
College of Community Innovation and Education  
[Lauren.Maroon@ucf.edu](mailto:Lauren.Maroon@ucf.edu)

M. H. Clark, PhD  
Associate Lecturer  
Methodology, Measurement, and Analysis  
Department of Learning Sciences and Educational Research  
College of Community Innovation and Education  
[M.H.Clark@ucf.edu](mailto:M.H.Clark@ucf.edu)

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Follow the link to opt out of future emails: [Click here to unsubscribe](#)

## **APPENDIX E: IRB APPROVAL**



UNIVERSITY OF CENTRAL FLORIDA

**Institutional Review Board**

FWA00000351

IRB00001138

Office of Research

12201 Research Parkway

Orlando, FL 32826-3246

EXEMPTION DETERMINATION

October 24, 2019

Dear Lauren Maroon:

On 10/24/2019, the IRB determined the following submission to be human subjects research that is exempt from regulation:

Type of Review:	Initial Study, Category 2,4
Title:	PREDICTING THE PERSISTENCE OF TRADITIONAL AND NONTRADITIONAL UNIVERSITY STUDENTS USING THE PSYCHOSOCIOCULTURAL MODEL
Investigator:	Lauren Maroon
IRB ID:	STUDY00000951
Funding:	None
Grant ID:	None

This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made, and there are questions about whether these changes affect the exempt status of the human research, please contact the IRB. When you have completed your research, please submit a Study Closure request so that IRB records will be accurate.

If you have any questions, please contact the UCF IRB at 407-823-2901 or [irb@ucf.edu](mailto:irb@ucf.edu). Please include your project title and IRB number in all correspondence with this office.

Sincerely,

Racine Jacques, Ph.D.  
Designated Reviewer



UNIVERSITY OF CENTRAL FLORIDA

**Institutional Review Board**

FWA00000351

IRB00001138

Office of Research

12201 Research Parkway

Orlando, FL 32826-3246

EXEMPTION DETERMINATION

November 1, 2019

Dear Lauren Maroon:

On 11/1/2019, the IRB determined the following submission to be human subjects research that is exempt from regulation:

Type of Review:	Modification / Update, Category 2,4
Title:	PREDICTING THE PERSISTENCE OF TRADITIONAL AND NONTRADITIONAL UNIVERSITY STUDENTS USING THE PSYCHOSOCIOCULTURAL MODEL
Investigator:	Lauren Maroon
IRB ID:	MOD00000592
Funding:	None
Grant ID:	None

This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made, and there are questions about whether these changes affect the exempt status of the human research, please contact the IRB. When you have completed your research, please submit a Study Closure request so that IRB records will be accurate.

If you have any questions, please contact the UCF IRB at 407-823-2901 or [irb@ucf.edu](mailto:irb@ucf.edu). Please include your project title and IRB number in all correspondence with this office.

Sincerely,

Racine Jacques, Ph.D.  
Designated Reviewer

## LIST OF REFERENCES

- Ancis, J. R., Sedlacek, W. E., & Mohr, J. J. (2000). Student perceptions of campus cultural climate by race. *Journal of Counseling & Development*, 78(2), 180–185.  
<https://doi.org/10.1002/j.1556-6676.2000.tb02576.x>
- Anderson, K. L. (1981). Post-high school experiences and college attrition. *Sociology of Education*, 54(1), 1–15. <https://doi.org/10.2307/2112508>
- Arnold, A. (1999). Retention and persistence in postsecondary education: A summation of research studies. *Texas Guaranteed Student Loan Corporation*, 5, 3–20.
- Ashar, H., & Skenes, R. (1993). Can Tinto's student departure model be applied to nontraditional students? *Adult Education Quarterly*, 43(2), 90–100.  
<https://doi.org/10.1177/0741713693043002003>
- Astin, A. W. (1970). College influence: A comprehensive view. *Contemporary Psychology*, 15(9), 543–546. <https://doi.org/10.1037/013855>
- Astin, A. W. (1974). Measuring outcomes of higher education. *New Directions for Institutional Research* (Vol. 1, pp. 23–46). San Francisco, CA: Jossey-Bass.
- Astin, A. W. (1975). *Financial aid and student persistence*. Los Angeles: Higher Education Research Institute. (ERIC Document Reproduction Service No. ED112804). Retrieved from <https://files.eric.ed.gov/fulltext/ED112804.pdf>
- Astin, A. W. (1984). Student involvement: A developmental theory for higher education. *Journal of College Student Personnel*, 25(4), 297–308. Retrieved from <https://psycnet.apa.org/record/1999-01418-006>
- Astin, A. W. (1985). *Achieving educational excellence*. San Francisco, CA: Jossey-Bass.
- Astin, A. W. (1991). *Assessment for excellence*. New York, NY: ACE Macmillan.

- Attinasi, L. C., Jr. (1989). Getting in: Mexican Americans' perceptions of university attendance and the implications for freshman year persistence. *Journal of Higher Education*, 60(3), 247–277. <https://doi.org/10.1080/00221546.1989.11775035>
- Baird, L. (1988). The college environment revisited: A review of research and theory. In J. Smart (Ed.), *Handbook of theory and research in higher education* (Vol. 4, pp. 1–52). New York, NY: Agathon.
- Baker, T. L., & Velez, W. (1996). Access to and opportunity in postsecondary education in the United States: A review. *Sociology of Education*, 69(2), 82–101.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191–215. <https://doi.org/10.1037/0033-295X.84.2.191>
- Banning, J. H., & Kaiser, L. (1974). An ecological perspective and model for campus design. *The Personnel and Guidance Journal*, 52(6), 370–375. <https://doi.org/10.1002/j.2164-4918.1974.tb04043.x>
- Barbera, S. A., Berkshire, S. D., Boronat, C. B., & Kennedy, M. H. (2017). Review of undergraduate student retention and graduation since 2010: Patterns, predictions, and recommendations for 2020. *Journal of College Student Retention: Research, Theory, and Practice*. <https://doi.org/10.1177/1521025117738233>
- Barnett, E. A. (2008). Faculty validation and persistence among nontraditional community college students. *Enrollment Management Journal*, 5(2), 97–117. <https://doi.org/10.7916/D81V5C1V>
- Bauman, S. S. M., Wang, N., DeLeon, C. W., Kafentzis, J., Zavala-Lopez, M., & Lindsey, M. S. (2004). Nontraditional students' service needs and social support resources: A pilot study.

- Journal of College Counseling*, 7(1), 13–17. <https://doi.org/10.1002/j.2161-1882.2004.tb00254.x>
- Bean, J. P. (1980). Dropouts and turnover: The synthesis and test of a causal model of student attrition. *Research in Higher Education*, 12(2), 155–187.  
<https://doi.org/10.1007/BF00976194>
- Bean, J. P. (1983). The application of a model of turnover in work organizations to the student attrition process. *The Review of Higher Education*, 6(2), 129–148.  
<https://doi.org/10.1353/rhe.1983.0026>
- 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>
- Berger, J. B., & Braxton, J. M. (1998). Revising Tinto's interactionalist theory of student departure through theory elaboration: Examining the role of organizational attributes in the persistence process. *Research in Higher Education*, 39(2), 103–119.  
<https://doi.org/10.1023/A:1018760513769>
- Bergman, M., Gross, J. P., Berry, M., & Shuck, B. (2014). If life happened but a degree didn't: Examining factors that impact adult student persistence. *The Journal of Continuing Higher Education*, 62(2), 90–101. <https://doi.org/10.1080/07377363.2014.915445>
- Biddle, B. J. (1979). *Role theory: Expectations, identities, and behaviors*. New York, NY: Academic Press.
- Biddle, B. J. (1986). Recent developments in role theory. *Annual Review of Sociology*, 12(1), 67–92. <https://doi.org/10.1146/annurev.so.12.080186.000435>



- Bodrog, B., Gloria, A., & Brockberg, D. (2018). The effects of mattering and combat deployment on student service members/veterans' college adjustment: A psychosociocultural approach. *Journal of Veterans Studies*, 3(2), 109–125.
- Bohl, A. J., Haak, B., & Shrestha, S. (2017). The experiences of nontraditional students: A qualitative inquiry. *The Journal of Continuing Higher Education*, 65(3), 166–174.  
<https://doi.org/10.1080/07377363.2017.1368663>
- Bollen, K. A., & Hoyle, R. H. (1990). Perceived cohesion: A conceptual and empirical examination. *Social Forces*, 69(2), 479–504. <https://doi.org/10.1093/sf/69.2.479>
- Bowl, M. (2001). Experiencing the barriers: Non-traditional students entering higher education. *Research Papers in Education*, 16(2), 141–160.  
<https://doi.org/10.1080/02671520110037410>
- Boyd, D., & Shea, R. (2015). Socioeconomic need for student parent success within a university environment. *Journal of Student Affairs*, 24, 79–92. Retrieved from  
[https://mountainscholar.org/bitstream/handle/10217/89985/JOUF\\_JSA\\_v24-2015.pdf](https://mountainscholar.org/bitstream/handle/10217/89985/JOUF_JSA_v24-2015.pdf)
- Boyle, T. P. (1989). An examination of the Tinto model of retention in higher education. *NASPA Journal*, 26(4), 288–294.
- Bradburn, E. M. (2002). *Short-term enrollment in postsecondary education: Student background and institutional differences in reasons for early departure, 1996–1998. (NCES 2003-153)*. Washington, DC: U.S. Department of Education. Retrieved from  
<https://files.eric.ed.gov/fulltext/ED470227.pdf>
- Braxton, J.M. (2000). Reinvigorating theory and research in the departure puzzle. In J. M. Braxton (Ed.), *Reworking the student departure puzzle* (pp. 257–274). Nashville, TN: Vanderbilt University Press.

- Braxton, J. M., & Brier, E. M. (1989). Melding organizational and interactional theories of student attrition: A path analytic study. *Review of Higher Education*, 13(1), 47–61. <https://doi.org/10.1353/rhe.1989.0003>
- Brinthaupt, T. M., & Eady, E. (2014). Faculty members' attitudes, perceptions, and behaviors toward their nontraditional students. *The Journal of Continuing Higher Education*, 62(3), 131–140. <https://doi.org/10.1080/07377363.2014.956027>
- Brock, T. (2010). Young adults and higher education: Barriers and breakthroughs to success. *The Future of Children* 20(1), 109–132. Retrieved from <https://www.jstor.org/stable/27795062>
- Bronfenbrenner, U. (1979). An ecological perspective and model for campus design. *The Personnel and Guidance Journal*, 52(6), 370–375. <https://doi.org/10.1002/j.2164-4918.1974.tb04043.x>
- Brown, L. L., & Robinson Kurpius, S. E. (1997). Psychosocial factors influencing academic persistence of American Indian college students. *Journal of College Student Development*, 38, 3–12.
- Bye, D., Pushkar, D., & Conway, M. (2007). Motivation, interest, and positive affect in traditional and nontraditional undergraduate students. *Adult Education Quarterly*, 57(2), 141–158. <https://doi.org/10.1177/0741713606294235>
- Cabrera, A. F., Nora, A., Terenzini, P. T., Pascarella, E., & Hagedorn, L. S. (1999). Campus racial climate and the adjustment of students to college: A comparison between White students and African-American students. *The Journal of Higher Education*, 70(2), 134–160. <https://doi.org/10.1080/00221546.1999.11780759>

- Carey, K. (2005a). *One step from the finish line: Higher college graduation rates are within our reach*. New York: The Education Trust.
- Carey, K. (2005b). *Choosing to improve: Voices from colleges and universities with better graduation rates*. New York: The Education Trust.
- Carney-Crompton, S., & Tan, J. (2002). Support systems, psychological functioning, and academic performance of nontraditional female students. *Adult Education Quarterly*, 52(2), 140–154. <https://doi.org/10.1177/0741713602052002005>
- Castellanos, J., Gloria, A. M., Rojas Perez, O. F., & Fonseca, L. (2018). Assessing the etic and emic well-being of Latino male undergraduates: Navegando los obstáculos de la universidad con mi cultura. *Psychology of Men & Masculinity*, 19(2), 184–194. <http://doi.org/10.1037/men0000090>
- Castillo, L. G., Conoley, C. W., Choi-Pearson, C., Archuleta, D. J., Phoummarath, M. J., & Landingham, A. V. (2006). University environment as a mediator of Latino ethnic identity and persistence attitudes. *Journal of Counseling Psychology*, 53(5), 267–271. <https://doi.org/10.1037/0022-0167.53.2.267>
- Chartrand, J. M. (1992). An empirical test of a model of nontraditional student adjustment. *Journal of Counseling Psychology*, 39(2), 193–202. Retrieved from <https://psycnet.apa.org/buy/1992-25233-001>
- Chen, H., Cohen, P., & Chen, S. (2010). How big is a big odds ratio? Interpreting the magnitudes of odds ratios in epidemiological studies. *Communications in Statistics—Simulation and Computation*, 39(4), 860–864. <https://doi.org/10.1080/03610911003650383>

- Chen, R. (2012). Institutional characteristics and college student dropout risks: A multi-level event history analysis. *Research in Higher Education*, 53(5), 487–505.  
<https://doi.org/10.1007/s11162-011-9241-4>
- Choy, S. (2002). *Nontraditional undergraduates: Findings from the condition of education 2002*. (NCES 2002-012). Washington DC: U.S. Department of Education, National Center for Education Statistics. Retrieved from <https://files.eric.ed.gov/fulltext/ED546117.pdf>
- Chun, H., Marin, M. R., Schwartz, J. P., Pham, A., & Castro-Olivo, S. M. (2016). Psychosociocultural structural model of college success among Latina/o students in Hispanic-serving institutions. *Journal of Diversity in Higher Education*, 9(4), 385–400.  
<http://doi.org/10.1037/a0039881>
- Chung, E., Turnbull, D., & Chur-Hansen, A. (2014). Who are non-traditional students? A systematic review of published definitions in research on mental health of tertiary students. *Educational Research and Reviews*, 9(22), 1224–1238.  
<https://doi.org/10.5897/ERR2014.1944>
- Collins, D. (2003). Pretesting survey instruments: An overview of cognitive methods. *Quality of Life Research*, 12(3), 229–238. <https://doi.org/10.1023/A:1023254226592>
- Colvin, B. B. (2013). Where is Merlin when I need him? The barriers to higher education are still in place: Recent re-entry experience. *New Horizons in Adult Education and Human Resource Development*, 25(2), 19–32. <https://doi.org/10.1002/nha.20014>
- Corbière, M., Mercier, C., & Lesage, A. (2004). Perceptions of barriers to employment, coping efficacy, and career search efficacy in people with mental illness. *Journal of Career Assessment*, 12(4), 460–478. <https://doi.org/10.1177/1069072704267738>

Coser, L. A. (1974). *Greedy institutions: Patterns of undivided commitment*. New York, NY: Free Press.

Cross, K. P. (1981). *Adults as learners. Increasing participation and facilitating learning*. San Francisco, CA: Jossey-Bass.

Crozier, G., Reay, D., Clayton, J., Colliander, L., & Grinstead, J. (2008). Different strokes for different folks: Diverse students in diverse institutions - experiences of higher education. *Research Papers in Education*, 23(2), 167–177.  
<https://doi.org/10.1080/02671520802048703>

Davidson, C., & Wilson, K. (2013). Reassessing Tinto's concepts of social and academic integration in student retention. *Journal of College Student Retention: Research, Theory & Practice*, 15(3), 329–346. <https://doi.org/10.2190/CS.15.3.b>

Deggs, D. (2011). Contextualizing the perceived barriers of adult learners in an accelerated undergraduate degree program. *The Qualitative Report*, 16(6), 1540–1553. Retrieved from <http://www.nova.edu/ssss/QR/QR16-6/deggs.pdf>

Delgado-Guerrero, M., & Gloria, A. M. (2013). La importancia de la hermandad Latina: Examining the psychosociocultural influences of Latina-based sororities on academic persistence decisions. *Journal of College Student Development*, 54(4), 361–378.  
<https://doi.org/10.1353/csd.2013.0067>

Deutskens, E., De Ruyter, K., Wetzels, M., & Oosterveld, P. (2004). Response rate and response quality of internet-based surveys: An experimental study. *Marketing Letters*, 15(1), 21–36. Retrieved from <https://www.jstor.org/stable/pdf/40216512.pdf>

- Devonport, T. J., & Lane, A. M. (2006). Relationships between self-efficacy, coping and student retention. *Social Behavior and Personality: An International Journal*, 34(2), 127–138.  
<https://doi.org/10.2224/sbp.2006.34.2.127>
- Dill, P. L., & Henley, T. B. (1998). Stressors of college: A comparison of traditional and nontraditional students. *The Journal of Psychology*, 132(1), 25–32.  
<https://doi.org/10.1080/00223989809599261>
- Doğan, T., Çötök, N. A., & Tekin, E. G. (2011). Reliability and validity of the Turkish Version of the UCLA Loneliness Scale (ULS-8) among university students. *Procedia-Social and Behavioral Sciences*, 15, 2058–2062. <https://doi.org/10.1016/j.sbspro.2011.04.053>
- Dixon Rayle, A., Robinson Kurpius, S. E., & Arredondo, P. (2006). Relationship of self-beliefs, social support, and university comfort with the academic success of freshman college women. *Journal of College Student Retention: Research, Theory & Practice*, 8(3), 325–343. <https://doi.org/10.2190/R237-6634-4082-8Q18>
- Dundes, L., & Marx, J. (2006). Balancing work and academics in college: Why do students working 10 to 19 hours per week excel? *Journal of College Student Retention: Research, Theory & Practice*, 8(1), 107–120. <https://doi.org/10.2190%2F7UCU-8F9M-94QG-5WWQ>
- Dyk, P. A. (1987). Graduate student management of family and academic roles. *Family Relations*, 36(3), 329–332. <https://doi.org/10.2307/583549>
- Edman, J. L., & Brazil, B. (2009). Perceptions of campus climate, academic efficacy and academic success among community college students: An ethnic comparison. *Social Psychology of Education*, 12(3), 371–383.

- Ellis, H. (2019). A nontraditional conundrum: The dilemma of nontraditional student attrition in higher education. *College Student Journal*, 51(3), 24–32.
- Englund, H. M. (2019). Nontraditional students' perceptions of marginalization in baccalaureate nursing education: Pushed to the periphery. *Nurse Educator*, 44(3), 164–169.  
<https://doi.org/10.1097/NNE.0000000000000581>
- Eyre, G. A. (2013) *An American heritage: A federal adult education legislative history 1964–2013*. Bethesda, MD: NOVA Research Company. Retrieved from  
<http://hdl.voced.edu.au/10707/295841>
- Fass, M., & Tubman, J. (2002). The influence of parental and peer attachment on college students' academic achievement. *Psychology in the Schools*, 39(5), 561–574.  
<https://doi.org/10.1002/pits.10050>
- Field, A. (2013). *Discovering statistic using IBM SPSS statistics* (4<sup>th</sup> ed.). Thousand Oaks, CA: SAGE.
- Forbus, P., Newbold, J. J., & Mehta, S. S. (2011). A study of non-traditional and traditional students in terms of their time management behaviors, stress factors, and coping strategies. *Academy of Educational Leadership Journal*, 15, 109–125.
- Franzway, S. (2000). Women working in a greedy institution: Commitment and emotional labour in the union movement. *Gender, Work & Organization*, 7(4), 258–268.  
<https://doi.org/10.1111/1468-0432.00113>
- Fugazzotto, S. J. (2009). Mission statements, physical space, and strategy in higher education. *Innovative Higher Education*, 34(5), 285. <https://doi.org/10.1007/s10755-009-9118-z>

- Gajic, A., Cameron, D., & Hurley, J. (2012). The cost-effectiveness of cash versus lottery incentives for a web-based, stated-preference community survey. *The European Journal of Health Economics*, 13(6), 789–799. <https://doi.org/10.1007/s10198-011-0332-0>
- Giancola, J. K., Grawitch, M. J., & Borchert, D. (2009). Dealing with the stress of college: A model for adult students. *Adult Education Quarterly*, 59(3), 246–263. <https://doi.org/10.1177/0741713609331479>
- Gloria, A. M. (1997). Chicana academic persistence: Creating a university-based community. *Education and Urban Society*, 30(1), 107–121. <https://doi.org/10.1177/0013124597030001007>
- Gloria, A. M., Castellanos, J., Lopez, A. G., & Rosales, R. (2005). An examination of academic nonpersistence decisions of Latino undergraduates. *Hispanic Journal of Behavioral Sciences*, 27(2), 202–223. <https://doi.org/10.1177/0739986305275098>
- Gloria, A. M., Castellanos, J., & Orozco, V. (2005). Perceived educational barriers, cultural fit, coping responses, and psychological well-being of Latina undergraduates. *Hispanic Journal of Behavioral Sciences*, 27(2), 161–183. <https://doi.org/10.1177/0739986305275097>
- Gloria, A. M., Castellanos, J., Scull, N. S., & Villegas, F. J. (2009). Psychological coping and wellbeing of male Latino undergraduates: Sobreviviendo la universidad. *Hispanic Journal of Behavioral Sciences*, 31(3), 317–339. <https://doi.org/10.1177/0739986309336845>
- Gloria, A. M., & Ho, T. A. (2003). Environmental, social, and psychological experience of Asian American undergraduates: Examining issues of academic persistence. *Journal of*



- Counseling and Development*, 81(1), 93–105. <https://doi.org/10.1002/j.1556-6678.2003.tb00230.x>
- Gloria, A. M., & Robinson Kurpius, S. E. (1996). The validation of the Cultural Congruity Scale and the University Environment Scale with Chicano/a students. *Hispanic Journal of Behavioral Sciences*, 18(4), 533–549. <https://doi.org/10.1177/07399863960184007>
- Gloria, A. M., Robinson Kurpius, S. E., Hamilton, K. D., & Willson, M. S. (1999). African American students' persistence at a predominantly white university: Influence of social support, university comfort, and self-beliefs. *Journal of College Student Development*, 40(3), 257–268. Retrieved from <https://psycnet.apa.org/record/1999-05202-005>
- Gloria, A. M., & Robinson Kurpius, S. E. (2001). Influences of self-beliefs, social support, and comfort in the university environment on the academic nonpersistence decisions of American Indian undergraduates. *Cultural Diversity and Ethnic Minority Psychology*, 7(1), 88–102. <http://doi.org/10.1037/1099-9809.7.1.88>
- Gloria, A. M., & Rodriguez, E. R. (2000). Counseling Latino university students: Psychosociocultural issues for consideration. *Journal of Counseling & Development*, 78(2), 145–154. <https://doi.org/10.1002/j.1556-6676.2000.tb02572.x>
- Gloria, A. M., & Segura-Herrera, T. A. (2004). Ambrocia and Omar go to college: A psychosociocultural examination of Chicana/os in higher education. In R. J. Velasquez, L. M. Arellano, & B. McNeill (Eds.), *The handbook of Chicana/o psychology and mental health* (pp. 401–425). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Goncalves, S. A., & Trunk, D. (2014). Obstacles to success for the nontraditional student in higher education. *Psi Chi Journal of Psychological Research*, 19(4), 164–172.

- Goode, W. (1960). A theory of role strain. *American Psychological Review*, 25(4), 483–496.  
<https://doi.org/10.2307/2092933>
- Hammes, J. F., & Haller, E. J. (1983). Making ends meet: Some of the consequences of part-time work for college students. *Journal of College Student Personnel*, 24(6), 529–535.  
Retrieved from <https://psycnet.apa.org/record/1984-18866-001>
- Hausmann, L.R.M., Schofield, J.W. & Woods, R.L. (2007). Sense of belonging as a predictor of intentions to persist among African American and White first-year college students. *Research in Higher Education*, 48(7), 803–839. <https://doi.org/10.1007/s11162-007-9052-9>
- Hays, R. D., & DiMatteo, M. R. (1987). A short-form measure of loneliness. *Journal of Personality Assessment*, 51(1), 69–81. [https://doi.org/10.1207/s15327752jpa5101\\_6](https://doi.org/10.1207/s15327752jpa5101_6)
- Heagney, M., & Benson, R. (2017). How mature-age students succeed in higher education: Implications for institutional support. *Journal of Higher Education Policy and Management*, 39(3), 216–234. <https://doi.org/10.1080/1360080X.2017.1300986>
- Home, A. (1993). The juggling act: The multiple role woman in social work education. *Canadian Social Work Review*, 10(2), 141–156. Retrieved from <https://www.jstor.org/stable/41669531>
- Horn, L. J. (1998). *Undergraduates who work. National postsecondary student aid study, 1996*. Washington, DC: U.S. Government Printing Office. Retrieved from <https://eric.ed.gov/?id=ED421042>
- Horn, L., & Carroll, D. (1996). *Nontraditional undergraduates: Trends in enrollment from 1986 to 1992 and persistence and attainment among 1989–90 beginning postsecondary*

- students* (NCES 97-578). Washington, DC: U.S. Government Printing Office. Retrieved from <http://nces.ed.gov/pubs/97578.pdf>
- Hovdhaugen, E. (2015). Working while studying: The impact of term-time employment on dropout rates. *Journal of Education and Work*, 28(6), 631–651.  
<https://doi.org/10.1080/13639080.2013.869311>
- Hurtado, S., & Carter, D. (1966). Latino students' sense of belonging in the college community: Rethinking the concept of integration on campus. In F. K. Stage, G. L. Anaya, J. P. Bean, D. Hossler, & G. Kuh (Eds.). *College students: Evolving nature of research* (pp. 123–136). Needham Heights, MA: Simon & Schuster Custom Publishing.
- Hurtado, S., & Carter, D. F. (1997). Effects of college transition and perceptions of the campus racial climate on Latino college students' sense of belonging. *Sociology of Education*, 70(4), 324–345. <https://doi.org/10.2307/2673270>
- Hurtado, S., Milem, J. F., Clayton-Pedersen, A. R., & Allen, W. R. (1999). Enhancing campus climates for racial/ethnic diversity: Educational policy and practice. *Review of Higher Education*, 21(3), 279–302. <https://doi.org/10.1353/rhe.1998.0003>
- Hyland-Russell, T., & Groen, J. (2011). Marginalized non-traditional adult learners: Beyond economics. *Canadian Journal for the Study of Adult Education*, 24(1), 61–79. Retrieved from <https://cjsae.library.dal.ca/index.php/cjsae/article/view/125>
- Institutional Knowledge Management (IKM). (2019a). *Data glossary*. Orlando, FL: University of Central Florida. Retrieved from <https://ikm.ucf.edu/resources/glossary/>
- Institutional Knowledge Management (IKM). (2020). *Data request*. Orlando, FL: University of Central Florida.

- Jacoby, B. (2015). Enhancing commuter student success: What's theory got to do with it? *New Directions for Student Services*, 2015(150), 3–12. <https://doi.org/10.1002/ss.20122>
- Jeffreys, M. (2007). Nontraditional students' perceptions of variables influencing retention: A multi-site study. *Nurse Educator*, 32(4), 161–167.  
<https://doi.org/10.1097/01.NNE.0000281086.35464.ed>
- Justice, E. M., & Dornan, T. M. (2001). Metacognitive differences between traditional-age and nontraditional-age college students. *Adult Education Quarterly*, 51(3), 236–249.  
<https://doi.org/10.1177/074171360105100305>
- Kasworm, C. E. (2008) Emotional Challenges of Adult Learners in Higher Education. In J. Dirkx (Ed). *Adult learning and the emotional self: New directions in adult and continuing education* (pp. 27–34). San Francisco, CA: Jossey Bass.
- Kasworm, C. E., & Pike, G. R. (1994). Adult undergraduate students: Evaluating the appropriateness of a traditional model of academic performance. *Research in Higher Education*, 35(6), 689–710. <https://doi.org/10.1007/BF02497082>
- Kazis, R., Callahan, A., Davidson, C., McLeod, A., Bosworth, B., Choitz, V., & Hoops, J. (2007). *Adult learners in higher education: Barriers to success and strategies to improve results*. U.S. Department of Labor Employment and Training Administration (Occasional Paper No. 2007–03). Retrieved from <http://files.eric.ed.gov/fulltext/ED497801.pdf>
- Keith, P. M. (2007). Barriers and nontraditional students' use of academic and social services. *College Student Journal*, 41(4), 1123–1128.
- Kim, K. A., Sax, L. J., Lee, J. J., & Hagedorn, L. S. (2010). Redefining nontraditional students: Exploring the self-perceptions of community college students. *Community College*

*Journal of Research and Practice*, 34(5), 402–422.

<https://doi.org/10.1080/10668920701382633>

- King, T., & Bannon, E. (2002). *At what cost? The price that working students pay for a college education*. Washington, DC: U.S. Public Interest Research Group. (ERIC Document Reproduction Service No. ED470026). Retrieved from <https://eric.ed.gov/?id=ED470026>
- Knowles, M. S. (1980). What is andragogy? In M. S. Knowles (Ed.), *The modern practice of adult education: From pedagogy to andragogy* (pp. 40–62). New York, NY: Cambridge.
- Kuh, G. D., Kinzie, J., Schuh, J. H., Whitt, E. J., & Associates (2011). *Student success in college: Creating conditions that matter*. San Francisco, CA: John Wiley & Sons.
- Laden, B.V., Milem, J., & Crowson, R.L. (2000). New institutional theory and student departure. In J. M. Braxton (Ed.), *Reworking the student departure puzzle* (pp. 235–256). Nashville, TN: Vanderbilt University Press.
- Lakin, M. B., Mullane, L., & Robinson, S. P. (2007). *Framing new terrain: Older adults & higher education*. Washington, DC: American Council on Education.
- Langrehr, K. J., Phillips, J. C., Melville, A., & Eum, K. (2015). Determinants of nontraditional student status: A methodological review of the research. *Journal of College Student Development*, 56(8), 876–881. <https://doi.org/10.1353/csd.2015.0090>
- Lee, N. E. (2018). The part-time student experience: Its influence on student engagement, perceptions, and retention. *Canadian Journal for the Study of Adult Education*, 30(1), 1–18. Retrieved from <https://cjsae.library.dal.ca/index.php/cjsae/article/view/5392>
- Leung, L. (2002). Loneliness, self-disclosure, and ICQ ("I Seek You") use. *Cyber Psychology and Behavior*, 5(3), 241–251. <https://doi.org/10.1089/109493102760147240>

- Lin, M. M., Her, P., & Gloria, A. M. (2015). Kawm Ntawv Qib Siab Understanding the psychosociocultural educational experiences of Hmong American undergraduates. *Journal of Southeast Asian American Education and Advancement*, 10(7), 1–22. <https://doi.org/10.7771/2153-8999.1123>
- Lin, R., LaCounte, D., & Eder, J. (1988). A study of Native American students in a predominantly White college. *Journal of American Indian Education*, 27(3), 8–15. Retrieved from <https://www.jstor.org/stable/24398049>
- Lindsay, T. N., & Gillum, N. L. (2018). Exploring single-mother college students' perceptions of their college-related experiences and of campus services. *The Journal of Continuing Higher Education*, 66(3), 188–199. <https://doi.org/10.1080/07377363.2018.1537657>
- Linton, R. (1936). *The study of man: An introduction*. New York, NY: Appleton-Century.
- Lopez, F. G., & Ann-Yi, S. (2006). Predictors of career indecision in three racial/ethnic groups of college women. *Journal of Career Development*, 33(1), 29–46. <https://doi.org/10.1177/0894845306287341>
- Lovell, E. D. (2014). College students who are parents need equitable services for retention. *Journal of College Student Retention: Research, Theory and Practice*, 16(2), 187–202. <https://doi.org/10.2190/CS.16.2.b>
- Luzzo, D. A., & McWhirter, E. H. (2001). Sex and ethnic differences in the perception of educational and career-related barriers and levels of coping efficacy. *Journal of Counseling & Development*, 79(1), 61–67. <https://doi.org/10.1002/j.1556-6676.2001.tb01944.x>

- Mallman, M., & Lee, H. (2016). Stigmatised learners: Mature-age students negotiating university culture. *British Journal of Sociology of Education*, 37(5), 684–701. <https://doi.org/10.1080/01425692.2014.973017>
- Mallman, M., & Lee, H. (2017). Isolated learners: Young mature-age students, university culture, and desire for academic sociality. *International Journal of Lifelong Education*, 36(5), 512–525. <https://doi.org/10.1080/02601370.2017.1302012>
- Manfreda, K. L., Bosnjak, M., Berzelak, J., Haas, I., & Vehovar, V. (2008). Web surveys versus other survey modes: A meta-analysis comparing response rates. *International Journal of Market Research*, 50(1), 79–104. <https://doi.org/10.1177/147078530805000107>
- Markle, G. (2015). Factors influencing persistence among nontraditional university students. *Adult Education Quarterly*, 65(3), 267–285. <https://doi.org/10.1177/0741713615583085>
- Martinez, E. F., Bilges, D. C., Shabazz, S. T., Miller, R., & Morote, E. S. (2012). To work or not to work: Student employment, resiliency, and institutional engagement of low-income, first-generation college students. *Journal of Student Financial Aid*, 42(2), 28–39.
- McGaha, V., & Fitzpatrick, J. (2005). Personal and social contributors to dropout risk for undergraduate students. *College Student Journal*, 39(2), 287–298.
- McNeil, J. C., Ohland, M. W., & Long, R. A. (2016). Entry pathways, academic performance, and persistence of nontraditional students in engineering by transfer status. *Proceedings of the Frontiers in Education Conference*. Erie, PA.  
<https://doi.org/10.1109/FIE.2016.7757548>
- Messick, S. (1979). Potential uses of noncognitive measurement in education. *Journal of Educational Psychology*, 71(3), 281–292. <https://doi.org/10.1037/0022-0663.71.3.281>

- Meuleman, A. M., Garrett, R., Wrench, A., & King, S. (2015). 'Some people might say I'm thriving but...': Non-traditional students' experiences of university. *International Journal of Inclusive Education*, 19(5), 503–517. <https://doi.org/10.1080/13603116.2014.945973>
- Metz, G. W. (2004). Challenge and changes to Tinto's persistence theory: A historical review. *Journal of College Student Retention: Research, Theory & Practice*, 6(2), 191–207. <https://doi.org/10.2190/M2CC-R7Y1-WY2Q-UPK5>
- Meyer, S. N. (2014). *Not designed with us in mind: Exploring the experiences and needs of adult learners at a public research university*. (Master's thesis). University of Nebraska, Lincoln. Retrieved from <http://digitalcommons.unl.edu/cehsedaddiss/178>
- Milem, J. F., & Berger, J. B. (1997). A modified model of college student persistence: Exploring the relationship between Astin's theory of involvement and Tinto's theory of student departure. *Journal of College Student Development*, 38(4), 387–400. Retrieved from [https://scholarworks.umass.edu/cie\\_faculty\\_pubs/11](https://scholarworks.umass.edu/cie_faculty_pubs/11)
- Miller, N. B. (2014). Nontraditional student graduation rate benchmarks. *The Journal of Continuing Higher Education*, 62(3), 141–151. <https://doi.org/10.1080/07377363.2014.953437>
- Mohrweis, L. C. (2010). The omitted variable in accounting education research: The non-traditional student. *American Journal of Business Education*, 3(11), 1–6. Retrieved from <https://eric.ed.gov/?id=EJ1058237>
- Moses, Y. T. (1990). The challenge of diversity: Anthropological perspectives on university culture. *Education and Urban Society*, 22(4), 402–412. <https://doi.org/10.1177/0013124590022004007>



- Mounsey, R., Vandehey, M., & Diekhoff, G. (2013). Working and non-working university students: Anxiety, depression, and grade point average. *College Student Journal*, 47(2), 379–389.
- Museus, S. D. (2014). The culturally engaging campus environments (CECE) model: A new theory of success among racially diverse college student populations. In M. B. Paulsen (Ed.), *Higher education: Handbook of theory and research* (pp. 189–227). New York, NY: Springer.
- Museus, S. D. (2016). Environmental theories. In J. H. Schuh, S. R. Jones, & V. Torres (Eds.), *Student services: A handbook for the profession* (pp. 236–251). San Francisco, CA: Jossey-Bass.
- Museus, S. D., & Quayle, S. J. (2009). Toward an intercultural perspective of racial and ethnic minority college student persistence. *The Review of Higher Education*, 33(1), 67–94.  
<https://doi.org/10.1353/rhe.0.0107>
- National Center for Education Statistics (2019a). *IPEDS 2019-20 data collection system: Survey materials glossary*. Washington, DC: U.S. Department of Education. Retrieved from <https://surveys.nces.ed.gov/ipeds/Downloads/Forms/IPEDSGlossary.pdf>
- National Center for Education Statistics. (2019b). *The condition of education: Characteristics of postsecondary students*. Washington DC: U.S. Department of Education. Retrieved from [https://nces.ed.gov/programs/coe/indicator\\_csb.asp](https://nces.ed.gov/programs/coe/indicator_csb.asp)
- National Center for Education Statistics. (2019c). *The condition of education: College student employment*. Washington DC: U.S. Department of Education. Retrieved from [https://nces.ed.gov/programs/coe/indicator\\_ssa.asp](https://nces.ed.gov/programs/coe/indicator_ssa.asp)

- Neto, F. & Barros, J. (2000). Psychosocial concomitants of loneliness among students of Cape Verde and Portugal. *Journal of Psychology*, 134(5), 503–514.  
<https://doi.org/10.1080/00223980009598232>
- Ntiri, D. W. (2001). Access to higher education for nontraditional students and minorities in a technology-focused society. *Urban Education*, 36(1), 129–144.  
<https://doi.org/10.1177/0042085901361007>
- O'Driscoll, M. P., Ilgen, D. R., & Hildreth, K. (1992). Time devoted to job and off-job activities, interrole conflict, and affective experiences. *Journal of Applied Psychology*, 77(3), 272–279. Retrieved from <https://psycnet.apa.org/buy/1992-37273-001>
- Olson, K., Smyth, J. D., & Wood, H. M. (2012). Does giving people their preferred survey mode actually increase survey participation rates? An experimental examination. *Public Opinion Quarterly*, 76(4), 611–635. <https://doi.org/10.1093/poq/nfs024>
- 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), 54–60. <https://doi.org/10.1177/1045159516658013>
- Parsons, T. (1951). *The social system*. Glencoe, IL: Free Press.
- Parsons, T., & Shils, E. A. (1951). *Toward a general theory of action*. Cambridge, MA: Harvard University Press.
- Pelletier, S. G. (2010). Success for adult students. *Public Purpose*, 12, 2–6.
- Philibert, N., Allen, J., & Elleven, R. (2008). Nontraditional students in community colleges and the model of college outcomes for adults. *Community College Journal of Research and Practice*, 32(8), 582–596. <https://doi.org/10.1080/10668920600859913>

- Pike, G. R., Kuh, G. D., & Massa-McKinley, R. C. (2008). First-year students' employment, engagement, and academic achievement: Untangling the relationship between work and grades. *NASPA Journal*, 45(4), 560–582. <https://doi.org/10.2202/1949-6605.2011>
- Ponterotto, J. G. (1990). Racial/ethnic minority and women students in higher education: A status report. *New Directions for Student Services*, 1990(52), 45–59. <https://doi.org/10.1002/ss.37119905206>
- Pontes, M. C., Hasit, C., Pontes, N. M., Lewis, P. A., & Siefring, K. T. (2010). Variables related to undergraduate students' preference for distance education classes. *Online Journal of Distance Learning Administration*, 13(2), 1–12. Retrieved from [https://www.westga.edu/~distance/ojdla/summer132/pontes\\_pontes132.pdf](https://www.westga.edu/~distance/ojdla/summer132/pontes_pontes132.pdf)
- Pritchard, M. E., & Wilson, G. S. (2003). Using emotional and social factors to predict student success. *Journal of College Student Development*, 44(1), 18–28. <https://doi.org/10.1353/csd.2003.0008>
- Procidano, M. E., & Heller, K. (1983). Measures of perceived social support from friends and from family: Three validation studies. *American Journal of Community Psychology*, 11(1), 1–24. <https://doi.org/10.1007/BF00898416>
- Pryor, J. H., Hurtado, S., Saenz, V. B., Santos, J. L., & Korn, W. S. (2007). *The American freshman: Forty year trends*. Los Angeles, CA: Higher Education Research Institute.
- Plageman, P. M., & Sabina, C. (2010). Perceived family influence on undergraduate adult female students. *The Journal of Continuing Higher Education*, 58(3), 156–166. <https://doi.org/10.1080/07377363.2010.491768>
- Pullins, T. L. (2011). *Predicting the retention of college sophomores: The importance of satisfaction*. (Doctoral dissertation). Retrieved from ProQuest. (UMI Number: 3482489).

- Quiggins, A., Ulmer, J., Hainline, M. S., Burris, S., Ritz, R., & Van Dusen, R. (2016). Motivations and barriers of undergraduate nontraditional students in the College of Agricultural Sciences and Natural Resources at Texas Tech University. *NACTA Journal*, 60(3), 272–281.
- Rabourn, K. E., BrckaLorenz, A., & Shoup, R. (2018). Reimagining student engagement: How nontraditional adult learners engage in traditional postsecondary environments. *The Journal of Continuing Higher Education*, 66(1), 22–33.  
<https://doi.org/10.1080/07377363.2018.1415635>
- Radford, A. W., Cominole, M., & Skomsvold, P. (2015). *Demographic and Enrollment Characteristics of Nontraditional Undergraduates: 2011–12. Web Tables. (NCES 2015-025)*. Washington DC: U.S. Department of Education.
- Rankin, S. R., & Reason, R. D. (2005). Differing perceptions: How students of color and white students perceive campus climate for underrepresented groups. *Journal of College Student Development*, 46(1), 43–61. <https://doi.org/10.1353/csd.2005.0008>
- Remenick, L. (2019). Services and support for nontraditional students in higher education: A historical literature review. *Journal of Adult and Continuing Education*, 25(1), 113–130.  
<https://doi.org/10.1177/1477971419842880>
- Rendón, L. I., Jalomo, R. E., & Nora, A. (2000). Theoretical considerations in the study of minority student retention in higher education. In J. M. Braxton (Ed.), *Reworking the student departure puzzle* (pp. 127–156). Nashville, TN: Vanderbilt University Press.
- Rendón Linares, L. I., & Muñoz, S. M. (2011). Revisiting validation theory: Theoretical foundations, applications, and extensions. *Enrollment Management Journal*, 2(1), 12–33.

- Richter-Antion, D. (1986). Qualitative differences between adult and younger students. *NASPA Journal*, 23(3), 58–62. <https://doi.org/10.1080/00220973.1986.11071966>
- Robbins, S. B., Lauver, K., Le, H., Davis, D., Langley, R., & Carlstrom, A. (2004). Do psychosocial and study skill factors predict college outcomes? A meta-analysis. *Psychological Bulletin*, 130(2), 261–288. <https://doi.org/10.1037/0033-2909.130.2.261>
- Russell, D., Peplau, L. A., & Cutrona, L. E. (1980). The revised UCLA Loneliness Scale: Concurrent and discriminant validity evidence. *Journal of Personality and Social Psychology*, 39(3), 472–480. <https://doi.org/10.1037/0022-3514.39.3.472>
- Salvant, A. (2016). *Identifying barriers to graduation for nontraditional students*. (Doctoral dissertation). Retrieved from <https://scholarworks.waldenu.edu/dissertations/1931/>
- Sedlacek, W. E., & Brooks, G. C., Jr. (1976). *Racism in American education: A model for change*. Chicago, IL: Nelson-Hall.
- Shapiro, D., Dundar, A., Ziskin, M., Yuan, X., & Harrell, A. (2013). *Completing college: A national view of student attainment rates—fall 2007 cohort*. National Student Clearinghouse Research Center. Retrieved from <http://nscresearchcenter.org/signature6extra/>
- Shih, T. H., & Fan, X. (2008). Comparing response rates from web and mail surveys: A meta-analysis. *Field Methods*, 20(3), 249–271. <https://doi.org/10.1177/1525822X08317085>
- Sims, C. H., & Barnett, D. R. (2015). Devalued, misunderstood, and marginalized: Why nontraditional students' experiences should be included in the diversity discourse. *Online Journal for Workforce Education & Development*, 8(1), 2–12. Retrieved from <https://opensiuc.lib.siu.edu/ojwed/vol8/iss1/2/>

- Stallman, H. M. (2010). Psychological distress in university students: A comparison with general population data. *Australian Psychologist*, 45(4), 249–257.  
<https://doi.org/10.1080/00050067.2010.482109>
- Strange, C. C., & Banning, J. H. (2001). *Educating by design: Creating campus learning environments that work*. San Francisco, CA: Jossey-Bass.
- Strange, C. C., & Banning, J. H. (2015). *Designing for learning: Creating campus environments for student success*. San Francisco, CA: John Wiley & Sons.
- Strayhorn, T. (2012). *College students' sense of belonging*. New York, NY: Routledge.
- Swil, W. S. (2002). Higher education and new demographics: Questions for policy. *Change: The Magazine of Higher Learning*, 34(4), 14–23.  
<https://doi.org/10.1080/00091380209604731>
- Tanaka, G. (2002). Higher education's self-reflexive turn: Toward an intercultural theory of student development. *Journal of Higher Education*, 73(2), 263–296.  
<https://doi.org/10.1080/00221546.2002.11777143>
- Taniguchi, H. & Kaufman, G. (2005). Degree completion among nontraditional college students. *Social Science Quarterly*, 86(4), 912–927. <https://doi.org/10.1111/j.0038-4941.2005.00363.x>
- Thompson, M. N., Johnson-Jennings, M., & Nitzarim, R. S. (2013). Native American undergraduate students' persistence intentions: A psychosociocultural perspective. *Cultural Diversity and Ethnic Minority Psychology*, 19(2), 218–228.  
<https://doi.org/10.1037/a0031546>

- Thompson-Ebanks, V. (2017). Leaving college prematurely: The experiences of nontraditional-age college students with depression. *Journal of College Student Retention: Research, Theory & Practice*, 18(4), 474–495. <https://doi.org/10.1177/1521025115611395>
- Tierney, W. G. (1992). An anthropological analysis of student participation in college. *The Journal of Higher Education*, 63(6), 603–618. <https://doi.org/10.1080/00221546.1992.11778391>
- Tierney, W. G. (1999). Models of minority college-going and retention: Cultural integrity versus cultural suicide. *Journal of Negro Education*, 68(1), 80–91. <https://doi.org/10.2307/2668211>
- Tilley, B. P. (2014). What makes a student non-traditional? A comparison of students over and under age 25 in online, accelerated psychology courses. *Psychology Learning & Teaching*, 13(2), 95–106. <https://doi.org/10.2304/plat.2014.13.2.95>
- 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>
- Tinto, V. (1982). Limits of theory and practice in student attrition. *Journal of Higher Education*, 53(6), 687–700. <https://doi.org/10.2307/1981525>
- Tinto, V. (1987). *Leaving college: Rethinking the causes and cures of student attrition*. Chicago, IL: University of Chicago Press.
- Tinto, V. (2010). From theory to action: Exploring the institutional conditions for student retention. In J. C. Smart (Ed.), *Higher education: Handbook of theory and research* (Vol. 25, pp. 51–89). Dordrecht, Netherlands: Springer. [https://doi.org/10.1007/978-90-481-8598-6\\_2](https://doi.org/10.1007/978-90-481-8598-6_2)

Tinto, V. (2017). Reflections on Student Persistence. *Student Success*, 8(2), 1–8.

<https://doi.org/10.5204/ssj.v8i2.376>

Tracey, T. J., & Sedlacek, W. E. (1984). Noncognitive variables in predicting academic success by race. *Measurement and Evaluation in Guidance*, 16(4), 171–178.

<https://doi.org/10.1080/00256307.1984.12022352>

Tracey, T. J., & Sedlacek, W. E. (1985). The relationship of noncognitive variables to academic success: A longitudinal comparison by race. *Journal of College Student Personnel*, 26(5), 405–410. Retrieved from <https://psycnet.apa.org/record/1986-15770-001>

Tracey, T. J., & Sedlacek, W. E. (1989). Factor structure of the Non-Cognitive Questionnaire-revised across samples of Black and White college students. *Educational and Psychological Measurement*, 49(3), 637–648.

<https://doi.org/10.1177/001316448904900316>

University of Central Florida (UCF). (2019). UCF facts 2019–20. Retrieved from

<https://www.ucf.edu/files/2020/01/UCF-Facts-and-Stats-2019-20.pdf>

University of Central Florida Institutional Review Board (UCF IRB). (2019). *Principal investigator's manual - appendices: Informed consent process and forms*. Retrieved from

[https://www.research.ucf.edu/compliance/IRB/Investigators/PI\\_Manual/appendices\\_consent.html](https://www.research.ucf.edu/compliance/IRB/Investigators/PI_Manual/appendices_consent.html)

University Professional and Continuing Education Association (UPCEA). (2012). *Measuring nontraditional student success: An imperative for colleges and universities*. Center for Research and Consulting. Retrieved from [http://www.insidetrack.com/wp-](http://www.insidetrack.com/wp-content/uploads/2013/09/insidetrack_upcea_measuringnontraditional-studentsuccess.pdf)

[content/uploads/2013/09/insidetrack\\_upcea\\_measuringnontraditional-studentsuccess.pdf](http://www.insidetrack.com/wp-content/uploads/2013/09/insidetrack_upcea_measuringnontraditional-studentsuccess.pdf)



- Vogt, W. P. (2005). *Dictionary of statistics & methodology* Thousand Oaks, CA: SAGE.  
<https://doi.org/10.4135/9781412983907>
- Wainwright, E., & Marandet, E. (2010). Parents in higher education: Impacts of university learning on the self and the family. *Educational Review*, 62(4), 449–465.  
<https://doi.org/10.1080/00131911.2010.487643>
- Wardley, L. J., Bélanger, C. H., & Leonard, V. M. (2013). Institutional commitment of traditional and non-traditional-aged students: A potential brand measurement? *Journal of Marketing for Higher Education*, 23(1), 90–112.  
<https://doi.org/10.1080/08841241.2013.810691>
- Wentworth, P. A., & Peterson, B. E. (2001). Crossing the line: Case studies of identity development in first-generation college women. *Journal of Adult Development*, 8(1), 9–21. <https://doi.org/10.1023/A:1026493620218>
- Wilcox, P., Winn, S., & Fyvie-Gauld, M. (2005). ‘It was nothing to do with the university, it was just the people’: The role of social support in the first-year experience of higher education. *Studies in Higher Education*, 30(6), 707–722.  
<https://doi.org/10.1080/03075070500340036>
- Witkowsky, P., Mendez, S., Ogunbowo, O., Clayton, G., & Hernandez, N. (2016). Nontraditional student perceptions of collegiate inclusion. *The Journal of Continuing Higher Education*, 64(1), 30–41. <https://doi.org/10.1080/07377363.2016.1130581>
- Wolbring, T., & Treischl, E. (2016). Selection bias in students’ evaluation of teaching. *Research in Higher Education*, 57(1), 51–71. <https://doi.org/10.1007%2Fs11162-015-9378-7>

Woods, K., & Frogge, G. (2017). Preferences and experiences of traditional and nontraditional university students. *The Journal of Continuing Higher Education*, 65(2), 94–105.

<https://doi.org/10.1080/07377363.2017.1318567>

Woodworth, J. L. (2019, May). *Announcing the condition of education 2019 release*. National Center for Education Statistics Blog. Retrieved from

<https://nces.ed.gov/blogs/nces/post/announcing-the-condition-of-education-2019-release>

Wu, C. H., & Yao, G. (2008). Psychometric analysis of the short-form UCLA Loneliness Scale (ULS-8) in Taiwanese undergraduate students. *Personality and Individual Differences*, 44(8), 1762–1771.

<https://doi.org/10.1016/j.paid.2008.02.003>