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Student Veterans' Sense of Validation and Its Effects on Intent to Persist: A Quantitative Study using Structural Equation Modeling

Author
Tilman, Travis

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Student Veterans' Sense of Validation and Its Effects on Intent to Persist: A Quantitative Study using Structural Equation Modeling

A dissertation submitted in partial satisfaction of the

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in Education

by

Travis Shane Tilman

2018

ABSTRACT OF THE DISSERTATION

Student Veterans' Sense of Validation and Its Effects on Intent to Persist:

A Quantitative Study using Structural Equation Modeling

by

Travis Shane Tilman

Doctor of Philosophy in Education

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Professor Mark Kevin Eagan, Chair

Since 9/11, military veteran enrollment in college has increased rapidly, but much remains unknown about their experience in higher education. The federal government has knocked down significant financial barriers for many of these student veterans through benefits provided by the different iterations of the GI Bill. However, a high number still leave college without earning their degrees. Drawing upon three waves of cross-sectional data collected from the Higher Education Research Institute's (HERI) Diverse Learning Environments (DLE) survey, this study used structural equation modeling (SEM) to demonstrate the extent to which student veterans' perceptions of staff and faculty concern and attention, or *validation*, relates to their intent to persist at their respective four-year colleges or universities. This study tested and slightly modified established measures of validation (Hurtado, Cuellar, & Guillermo-Wann, 2011) for student veterans and non-veteran students with similar backgrounds. With these latent

traits confirmed, this study examined the relationship between each group's sense of validation and their persistence intentions, comparing structural differences. Rendón's (1994) theory of validation provided the framework for the main independent variable of interest, and Nora's (2003) model of student engagement guided the selection of control variables used to model differences in students' intent to persist.

Results indicate that validation is central to models predicting intent to persist for each group of college students, but a different mix of characteristics and experiences explained variation in intentions to persist for student veterans than for the matched sample of non-veteran, nontraditional students. Student veterans who experienced more validation from staff and faculty also had more confidence in their academic abilities, which, in turn, was related to being more likely to intend to return to the same campus for the following fall term. These factors serve to better connect students to campus, yet they compete with external influences, including work and family responsibilities, which have a tendency to pull student veterans away from their institutions. In addition to enhancing students' persistence intentions, more frequently perceiving validation from faculty and staff also correlated with higher grades and a sense of belonging. These relationships remained when testing a structural model for a sub-sample of student veterans of color. For non-veteran students with similar backgrounds, validation had a direct link to intent to persist and to confidence in academic abilities. However, unlike student veterans, non-veteran students with greater academic confidence expressed intentions to leave their current institution by the start of the following fall term. Implications for the U.S. military, higher education policymakers, college and university leaders, faculty and staff include extending transition assistance to veterans as they separate, intentionally incorporating validation into trainings, and modeling inclusive teaching practices.

The dissertation of Travis Shane Tilman is approved.

Mitchell J. Chang

Cecilia Rios Aguilar

Maia Young

Mark Kevin Eagan, Chair

University of California, Los Angeles

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TABLE OF CONTENTS

LIST OF FIGURES AND TABLES

Figures

Tables

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VITA

2000	B.S. – Engineering Management U. S. Military Academy West Point, New York
2000-Present	U.S. Army Engineer Officer
2001-2003	Platoon Leader & Executive Officer C Company, 20th Engineer Battalion, 1st Cavalry Division Fort Hood, Texas
2003-2004	Assistant Operations Officer Army Forces, Joint Task Force Bravo Soto Cano Air Base, Honduras
2004-2005	Assistant Operations Officer & Project Officer Engineer Brigade, 1st Cavalry Division Baghdad, Iraq
2006-2008	Company Commander E Company, 1st Battalion, 12th Cavalry Regiment, 1st Cavalry Division Fort Hood, Texas & Baqubah, Iraq
2010	M.S. – Kinesiology (Sport/Performance Psychology), California State University, Fullerton Fullerton, California
2010-2012	Instructor & Executive Officer Center for Enhanced Performance U. S. Military Academy, West Point, New York
2012-2013	Assistant Professor & Executive Officer Center for Enhanced Performance U. S. Military Academy, West Point, New York
2013-2015	Executive Officer & Operations Officer 2nd Engineer Battalion White Sands Missile Range, New Mexico
2016	M.S. – Education University of California, Los Angeles Los Angeles, California

SELECTED PUBLICATIONS AND PRESENTATIONS

Tilman, T., Eagan, K. (2016). *Tanks and battleships to hallways and classrooms: Understanding the student veteran college experience*. Paper presented at the Association for the Study of Higher Education Annual Conference, Columbus, Ohio.

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Berdan Lozano, J. & Tilman, T., (2016). *2016 college senior survey research brief*. Los Angeles: Higher Education Research Institute, UCLA.

Tilman, T. (2012). *Clear your mind to clear the way*. Poster presented at the Association for Applied Sport Psychology Annual Conference, Atlanta, GA.

Tilman, T., Ravizza, K., & Statler, T. (2011). Clear your mind to clear the way: Mental preparation. *Engineer: The Professional Bulletin for Army Engineers*, *41*(3), 32-35.

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CHAPTER 1: INTRODUCTION TO THE STUDY

The U.S. government has long provided military veterans with compensation in the form of educational benefits in recognition of their service to the nation as well as a way to help them transition from combat soldiers to productive citizens within society. In 1944, the GI Bill helped transform both the middle class and higher education by giving veterans, regardless of background, the ability to enroll in college (Cardozier, 1993; Cohen & Kisker, 2010; Thelin, 2011). In 2008, the GI Bill was renewed (Department of Veterans Affairs [VA], 2017a), and, once again, veterans flooded classrooms with over 650,000 enrolling in some form of higher education or training in 2015 alone (VA, 2016). For that single year, the federal government invested over $11 billion into the education of a remarkably diverse group of men and women, the vast majority of whom (62%) are the first in their families to attend college (VA, 2016, 2017b).

More recently, the U.S. Congress updated the educational benefits of servicemembers by passing the Harry W. Colmery Veterans Educational Assistance Act of 2017 (Wentling, 2017). The bill, signed into law by the president in August 2017, has been nicknamed the "Forever GI Bill" for its removal of a 15-year time limit for veterans and their dependents to use their educational benefits after leaving active duty. As the bill was being considered, historian and president emeritus of Dartmouth College James Wright wrote that this bill should not be considered as a way to thank veterans for their service; instead, he explained it should be considered "an investment in the future of the Republic" (Wright, 2017) to help restore national civic engagement. Wright (2017) argues that veterans contribute positively to society by bringing an attitude and character shaped by having to work through complex problems in dangerous environments with people of different cultures and backgrounds; this bill enables them to

continue to serve the nation. Other provisions of the bill include expanded benefits for mobilized National Guard and Reservists, Purple Heart Recipients, and incentives in the form of extra benefits (extra nine months and up to $30,000) for veterans pursuing science, technology, engineering, and mathematics degrees (Wentling, 2017).

As a complement to the financial benefits of the GI Bill, the federal government has taken measures to ensure veterans' successful transition from military service to civilian careers. Mainly as a response to high veteran unemployment, Congress directed the Department of Defense (DoD) in 2011 to develop, in cooperation with other governmental agencies, a mandatory transition program aimed at preparing separating and retiring servicemembers for their transition to the workforce (Government Accountability Office [GAO], 2014). As a result, DoD established the Transition Assistance Program (TAP) to teach service members how to effectively deal with this life-changing event; the core curriculum teaches participants how to translate military skills and experience to civilian sector occupations and skills, write effective resumes, prepare for interviews, negotiate salaries, and even how to dress properly (DoD, 2017a) - all skills they have largely never considered during their time in the military. In addition to TAP's core curriculum, servicemembers wishing to pursue their college degree have the opportunity to attend a brief two-day workshop focused on topics such as how to research and compare institutions and how to prepare financially for college (DoD, 2017b). However, this two-day workshop is the only formal federal government program designed to aid separating servicemembers in their transition to higher education.

Despite the funding and the transition support, student veterans face significant challenges in navigating the transition from the military to the classroom. Capturing these challenges and determining their effects on persistence has eluded researchers. While presenting

the National Veterans Education Success Tracker (NVEST), former U.S. President George W. Bush touted the success of student veterans by stating "we know that student veterans like you outperform your peers" (Student Veterans of America [SVA], 2017). Bush's statement represents the findings of a study conducted through the partnership of the VA, SVA, and National Student Clearinghouse (NSC) to analyze over 800,000 student veteran records (Cate, Lyon, Schmeling & Bogue, 2017). In this report, 71.6% of student veterans, using educational benefits exclusively from the Post-9/11 GI Bill, have earned their degree or are continuing in their studies (Cate et al., 2017). However, this is a much higher rate of persistence than the 51.7% reported by Cate (2014) for student veterans using either Montgomery or Post-9/11 GI Bill benefits or the 48% the VA (2015) reports for student veterans attending college with or without assistance from the Post-9/11 GI Bill or its previous versions.

While Cate et al.'s (2017) report is promising, scholars have found student veterans are frequently frustrated with their professors and non-veteran peers to the point that they experience a less than ideal learning environment - a learning environment that might even translate to lower achievement and persistence (DiRamio, Ackerman, & Mitchell, 2008; Hammond, 2015; Rumann & Hamrick, 2010). However, the relationship between student veterans' experience in college and achievement or persistence remains unknown. Despite their efforts, researchers know very little as to why 29-50% of student veterans leave college before finishing their degree.

Problem Statement

Although much is known regarding the transition experiences and mechanisms responsible for facilitating the success of college students who have never served in the military (Astin, 1993; Bean & Metzner, 1985; Nora, 2003; Pascarella & Terenzini, 2005; Tinto, 1993), higher education research remains much more limited with respect to these issues among student

veterans. Given this fact and wide-ranging reports about student veterans in college, the field of higher education needs more studies that use rigorous qualitative or quantitative designs to investigate the ways in which student veterans adapt to the campus environment as well as the ways in which colleges and universities can better train their faculty and staff to most effectively support the growing ranks of student veterans on campus.

Research Questions

The following research questions guided this study:

1) How do bachelor's degree-seeking students with current or prior military service compare with their peers who have not served in the military with respect to demographic characteristics and pre-college experiences?

2) To what extent do the structural properties of established latent measures of validation for a general population of college students also hold for student veterans?

3) Controlling for other demographic characteristics and college experiences, to what extent do measures of validation and identification as a veteran explain students' intentions to persist?

4) To what extent does the model that predicts intent to persist for student veterans also fit nontraditional students?

a) How do race/ethnicity gender moderate the relationship between validation, veteran status, and intent to persist?

b) How does gender moderate the relationship between validation, veteran status, and intent to persist?

Purpose of the Study

Analyzing survey data collected from more than 40,000 students, including 1,073 student veterans, enrolled at 74 colleges and universities, this study examined the extent to which student

veterans' sense of validation relates to their intention to persist. Hurtado, Cuellar, and Guillermo-Wann (2011) developed and tested two measures, *academic validation in the classroom* and *general interpersonal validation,* for a general population of students. Academic validation in the classroom "measures the extents to which student views of faculty actions in class reflect concern for the academic success" (Hurtado & Guillermo-Wann, 2013, p. 15) and general interpersonal validation is "a unified measure of student's view of faculty and staff's attention to their development" (Hurtado & Guillermo-Wann, 2013, p. 15). This study evaluated the validity of these measures for student veterans and slightly modified to more appropriately account for student veterans' experiences with validation. With these latent traits identified and tested, this study examined the relationship between student veterans' sense of validation and their intent to persist. While validation theory (Rendón, 1994) provided a framework for the main independent variable of interest, Nora's (2003) model of student engagement guided the selection of control variables used to model differences in student veterans' persistence intentions.

Significance

Military veterans have committed their lives to serving their nation at a time when the rate of deployments in support of combat operations is higher than at any other time in our nation's history. A significant number now navigate the classrooms of our colleges and universities with aspirations not to attend football games or join Greek life but instead to obtain their degrees and prepare for civilian careers and civilian life. By ensuring these veterans complete their degrees, higher education institutions serve an important role in helping veterans to have a successful transition into civilian life and in providing taxpayers with a return on their investment in the GI Bill.

College degree holders have a number of financial advantages over individuals who do not earn a degree (Bowen, 1977; Gutmann, 1999; Mumper, Gladieux, King, & Corrigan, 2016; Van der Werf & Sabatier, 2009), and the U.S. Department of Education (2015) has declared that "[w]ith the average earnings of college graduates at a level that is twice that of workers with only a high school diploma, higher education is now the clearest path into the middle class" (p. 3). These increased earnings translate to increased tax revenue at the local, state, and federal levels (Johnson, 2010) used to fund health and human services, K-12 education, and improvements in infrastructure. Additionally, college-educated individuals place less demand on social services than individuals and have higher rates of civic participation (e.g., voting, volunteering), which further contribute to the public good (Bowen, 1977; Johnson, 2010). College degree holders also tend to have a better understanding of the democratic processes of society and an increased capacity to critically examine political arguments and social issues (Bowen, 1977). Furthermore, universities ultimately serve as the "gatekeepers" (Gutmann, 1999, p. 185) to serving in public office or becoming a leader in public policy and government. Given the many advantages associated with earning a college degree, veterans with less education may find difficulty in critically evaluating through the nature of politics or in obtaining leadership positions in government

While significant studies by Cate and colleagues have yielded more fidelity in the rates of persistence for student veterans, several limitations of previous studies constrain our collective understanding of how this distinct student group translates its rich diversity, their perceptions of campus life, and varied experiences with faculty, staff, and students into outcomes related to connectedness to campus, academic achievement, and, ultimately, persistence. First, most recent studies have largely used qualitative methods to provide compelling portraits of individual cases

or small groups of veterans – groups that have consisted mostly of White males despite the diversity of the overall student veteran population (DiRamio, Ackerman, & Mitchell, 2008; Hammond, 2015; Rumann & Hamrick, 2010). Second, studies involving student veterans of color or women student veterans have also been limited to single case studies or single universities minimizing their generalizability (e.g., Cole-Morton, 2013; Heitzman and Somers, 2015). Finally, no study has examined the role of staff and faculty in student veterans' college persistence decisions.

The development of accurate measures of validation for this population of college students sheds new light on the extent to which key institutional agents (e.g., staff, faculty, administrators) may influence the experiences, perceptions, and outcomes of student veterans (Stanton-Salazar & Dornbusch, 1995). This increased insight may encourage the development of workshops or programs to increase student veteran engagement. Rumann and Bondi (2015) already recommend specific engagement strategies guided by Rendón's (1994) theory of validation while assuming that the theory applies to the student veteran population. For example, they recommend the creation of mentoring programs where student veterans already gather, encouraging faculty to allow student veterans time to reflect and discuss how course material relates to their military experience, and strategies to ensure student veterans are not singled out for their military status.

Statement of Positionality

I believe it is important to include a statement that clarifies my relationship with veterans and why I felt compelled to undertake this study. From 2006-2008, I was the commander of a company of over 100 soldiers deployed to the Diyala Province of Iraq. Engaged in heavy fighting, our 15-month deployment was both exhausting and transformative. The men I served

with during this time varied in age and background. Some were right out of high school, even arriving months into our time in Iraq, and others were much more experienced with multiple deployments.

Throughout the deployment, I had a chance to learn a great deal about my soldiers – what their lives were like growing up, why they joined the military, and what they wanted to do after serving their country. Many joined to escape a grim economic situation where there were few good paying jobs. Others joined for the educational benefits, knowing that a degree would help them and their families escape poverty. And some of the soldiers joined for purely patriotic reasons or for a combination of reasons.

For the ones who wanted to go attend college, I soon learned that, even with financial assistance, their road to earning a degree would not be easy. In fact, many of them were unable to earn their degrees while also exhausting their educational benefits. In many ways, they are no better off than when they first left home for the military despite having risked their lives in a foreign land in service to the nation. This reality is disheartening, and I want to engage in research related to finding solutions aimed at improving student veterans' success in college. I want to develop a message that I can share with colleges and universities about how they many help these veterans navigate the college environment to earn their degrees.

Theoretical and Conceptual Framework

Theoretical and conceptual models assist researchers in deliberately selecting and arranging variables to make predictions and answer research questions (Creswell, 2014). This study used Rendón's (1994) theory of validation to better understand the role of faculty and staff in the learning environment of student veterans. By coupling this theory with a conceptual model

of student persistence (Nora, 2003), a more complete understanding of how this learning environment affects student veteran persistence is possible.

In 1994 Rendón sought to establish a framework to assist institutions colleges and universities in adapting to the changing demography of their students who no longer reflected their privileged, White male origins. Rendón (1994) determined that validating agents are an important part of nontraditional student success because acts of validation help reshape their confidence in academic abilities, which subsequently changes attitudes, behaviors, and, ultimately, achievement even in the absence of social and academic integration. Rendón (1994) determined validation is so important that "[e]ven the most vulnerable nontraditional students can be transformed into power learners through in- and out-of-class academic and/or interpersonal validation" (p. 37).

Student veterans are also considered nontraditional students by virtue of their diverse demography and multiple identities (O'Rourke, 2013; Rumann & Bondi, 2015). As such, Rumann and Bondi (2015) argue that the theory of validation provides a necessary framework to ensure student veteran success and recommends staff, faculty, and any potential validating agents validation be trained on the unique ways in which they can provide support to student veterans. Without providing empirical evidence, Rumann and Bondi (2015) connect student veterans with the theory by noting their overlap with nontraditional students from Rendón's (1994) study.

With Rendon's (1994) validation theory establishes the theoretical link between validation and intention to persist, Nora's (2003) model of student engagement, which combines elements from several prominent models, including Tinto's (1993) model, guided the selection of variables. Tinto's model has long been criticized for ignoring the experiences of non-White students (Hurtado & Carter, 1997; Rendón, Jalomo, & Nora, 2000; Tierney, 1992). Recognizing

these shortfalls, Nora (2003) distinguishes his model by incorporating elements of theoretical perspectives and conceptual frameworks that were developed specifically for students of color (Nora & Crisp, 2012). For example, students' sense of belonging (Hurtado & Carter, 1997) and Rendón's (1994) theory of validation are each included in Nora's (2003) model to more closely represent students' of color college experiences and reasons for dropping out of college.

Nora's (2003) model includes the following categories of variables influencing persistence: precollege factors, environmental "pull" factors, educational aspirations, academic and social experiences (including validating actions), cognitive and noncognitive outcomes, goal determination, and institutional commitment. Combining this conceptual model with measures of validation adjusted for student veterans, an accurate understanding of their experience in higher education and reason for leaving college was gained.

Research Design

In order to answer the proposed research questions, this study analyzed data gathered by the Higher Education Research Institute's (HERI) Diverse Learning Environments (DLE) survey. Administered by colleges and universities across the U.S. each year, DLE survey is "designed to assess campus climate, educational practices, and a set of outcomes focused on retention and citizenship in a multicultural society" (Hurtado & Guillermo-Wann, 2013, p. 6). This study combined data gathered by the 2015, 2016, and 2017 DLE Survey instruments to bring forth a dataset of more than 40,000 students from 74 four-year colleges and universities across the United States. Of this combined sample, 1,073 students self-identify as veterans (e.g. past or current active duty, Reservists, or member of the National Guard), which is a substantially larger sample size compared to most other quantitative studies on student veterans

(e.g., Durdella & Kim, 2012; O'Rourke, 2013; Southwell, Whiteman, MacDermid Wadsworth, & Barry, 2016).

To determine whether student veterans perceive validation in ways that are distinct from other nontraditional students, I used propensity score matching techniques to pair each student veteran in the dataset with a non-veteran peer who shared a similar set of key characteristics (i.e., race, sex, high school grades, whether they have children). This initial step ensured I was testing factor structures and modeling persistence decisions on data from students who share similar background characteristics and life experiences. The final matched sample included 539 student veterans and 531 non-veteran, nontraditional students.

After describing my sample of student veterans using descriptive statistics, I used structural equation modeling (SEM) to conduct a confirmatory factor analysis (CFA) to test the validity of Hurtado et al.'s (2011) validation measures for student veterans. When goodness of fit statistics suggested a poor fit, I slightly modified the factor structure to better fit the data from the sample of student veterans and their non-veteran counterparts. Once I established valid measures, I employed SEM to examine the relationship between validation constructs, student persistence, and other important variables in accordance with Nora's (2003) model of student engagement. SEM offered several advantages over other inferential analytic techniques, as the approach provides parameter estimates for direct, indirect, and total effects of the relationship among key variables of interest whereas other techniques, such as linear regression, only offer estimates for the relationship between each independent variable and one dependent variable (Bentler, 2006; Byrne, 2006). SEM also offered an opportunity to simultaneously determine whether a predictive model adequately explains a phenomenon across different groups of individuals (i.e., student veterans vs. nonveteran students) (Bentler, 2006; Byrne, 2006).

Summary of Findings

Ultimately, this study suggests that student veterans are older, more likely to have children, and are more likely to be male than students without a military background. They are also slightly more diverse in terms of race and ethnicity. Even with these differences, validation measures developed and tested by Hurtado and colleagues (2011) for their sample of students of color also had similar structural properties and factor loadings for student veterans and their matched, non-veteran counterparts. However, student veterans experienced higher levels of validation from staff and faculty than their matched counterparts without a military background.

Once validation measures were confirmed and integrated into structural equation models, this study determined that student veterans' sense of academic and general interpersonal validation is central to the model predicting intent to persist. More specifically, student veterans who experienced more validation from staff and faculty also had more confidence in their academic abilities which, in turn, is related to being intent on returning to their respective college or university. These factors compete with external influences, including work and family responsibilities, which have a tendency to pull student veterans away from their institutions. In addition, validation was also associated with higher grades and a greater sense of belonging for this group of students. While structural models differed for the sub-sample of student veterans of color, these identified relationships remained.

The model predicting intent to persist for student veterans differed substantially from the model for their matched, non-veteran counterparts. However, validation remained central and included a direct link to intent to persist for this group of students. Students who received more attention from staff and faculty also expressed stronger intentions to re-enroll at their institutions for the following fall term. Similar to student veterans, validation for this groups of students

were also associated with higher confidence in academic abilities. Unlike student veterans, non-veteran students with more confidence intend to re-enroll at their current institution at lower rates than their counterparts who express less academic confidence.

Definition of Terms

Veterans. Though the U.S. Code (2011) defines a veteran as a "person who served in the active military, naval, or air service, and who was discharged or released therefrom under conditions other than dishonorable" (Veterans' Benefits 38 U.S.C. § 101, 2011), current student veteran literature regards anyone with past or current military service, combat or otherwise, as a student veteran due to their unique experience that separates them from other college students (DiRamio et al., 2008, Rumann & Hamrick, 2010; Vacchi, 2012). Consistent with other scholars, this study will follow the broad, inclusive definition of student veterans.

Persistence The act of a student continuing in higher education. In accordance with previous literature (e.g., Bean & Metzner, 1985), this study will use a student's intent to remain in college or dropout the following fall is used as a proxy for their actual behavior. Although a goal of this study is to verify intentions with actual enrollment, student intentions are useful when student data, beyond survey results, is not available.

Validation. Rendón (1994) defines validation as an "enabling, confirming and supportive process initiated by in- and out-of-class agents that foster academic and interpersonal development" (p. 44). By this definition, validating agents can be anyone who has access to the classroom or anyone who interacts with a student outside of the classroom. For example, out-of-class validating agents may include staff, faculty, family members, spouses, coaches, and advisors, among others.

Summary

Current research on student veterans suffers from insufficient information about their college experiences and how these experiences relate to their persistence decisions. Research and theoretical models related to the experiences of nontraditional, non-veteran students offer some insight into understanding student veterans, but we need further investigation as to whether having served in the military leads to a distinct perspective or set of experiences. The next chapter highlights the sparse student veteran literature, explores Rendón's (1994) theory of validation and the subsequent development of quantitative measures (Barnett, 2011; Hurtado, Cuellar, & Guillermo-Wann, 2011), and provides a rationale for Nora's (2003) model of student engagement to a study of the persistence intentions among student veterans. The third chapter details this study's use of structural equation modeling to identify latent measures of validation for student veterans and determine the extent to which these measures explain student veterans' intentions to persist. The fourth chapter presents the results from the descriptive and inferential analyses, organized by each of the four overarching research questions. Finally, the fifth chapter places the findings within the broader research and policy context for student veterans and offers implications for the many stakeholders interested in the academic success of student veterans in college.

CHAPTER 2: REVIEW OF LITERATURE

Public interest in veterans' college pursuits and experiences often seems to correspond to the nation's involvement in war and updates to the GI Bill by Congress (Altschuler & Blumin, 2009). At the conclusion of World War II, research and practitioner efforts began to focus on how colleges and universities could suddenly adjust to the influx of millions of veterans returning from war (Frederiksen & Schrader, 1951; Thelin, 2011; Toven, 1945). Critics in the years following WWII expressed concerns about whether veterans could handle the rigors of college due to their absence from the academic environment, trauma of war, or, simply, due to inadequate secondary education (Frederiksen & Schrader, 1951; Toven, 1945). However, returning veterans proved critics wrong by a bringing a maturity and focus shaped by both their age and military experience (Frederiksen & Schrader, 1951).

More recently, American involvement in the wars in Iraq and Afghanistan has shaped a new generation of veterans, which has forced policy makers to re-examine the educational benefits of the GI Bill and prompted colleges and universities, researchers, and advocates to identify new ways to provide this special population with adequate support. Recent research has maintained a primary focus on the college transition experiences of student veterans (DiRamio, Ackerman, & Mitchell, 2008; Livingston & Bauman, 2013; Livingston, Havice, Cawthon, & Fleming, 2011; Rumann & Hamrick, 2010), and other studies have examined whether combat veterans' perceptions of identity have implications for their persistence in college (Hammond, 2015; O'Rourke, 2013). The revisions to the GI Bill in 2008 and significant growth in enrollment among student veterans has reinvigorated interest in studying how these individuals adjust to, experience, and succeed in college, yet no study has considered how student veterans'

perceptions of their interactions with and treatment from staff or faculty relate to their intentions to persist in their degree programs; the current study addresses this critical gap.

Conceptual models of student retention or persistence (e.g., Bean & Metzner, 1985; Nora, 2003; Tinto, 1975, 1987, 1993) and confirmation of various measures of validation (e.g., Barnett, 2011; Hurtado, Cuellar, and Guillermo-Wann, 2011) have been developed and tested in studies that utilize datasets that draw heavily from more traditional populations of college students. This focus provides an opportunity to examine the applicability of these models and factor structures to a sample of student veterans. This chapter provides the foundation for the study of student veteran persistence by outlining relevant student veteran literature, introducing background and concepts of validation theory, and providing an appropriate conceptual model to inform the selection and organization of factors related to persistence.

Student Veteran Research

In 1944, Congress designed the Serviceman's Readjustment Act, commonly known as the GI Bill, to keep millions of returning World War II veterans purposely occupied until the economy could shift to support peacetime production and properly absorb so many potential laborers (Cardozier, 1993; Thelin, 2011). This bill guaranteed any eligible veteran educational benefits regardless of their race, gender, ethnicity, socioeconomic status or even educational background (Cardozier, 1993; Thelin, 2011). Additionally, the educational benefits were portable in that they could be used at a veteran's school of choosing, public or private, or even at a trade school or vocational program helping to reshape higher education in the United States.

Ever since Congress passed the original GI Bill, if not before, researchers and practitioners have sought to understand the student veteran experience. In 1945, Toven provided a practical guide to college counselors that detailed what they should expect from returning war

veterans and makes recommendation on how they could help veterans transition effectively to take advantage of their educational opportunities and, ultimately, become productive graduates (Toven, 1945). He describes war veterans heavily shaped by their war experience as having "abnormal maturity" (p.337). The World War II veteran was very focused on obtaining their degree and moving on with their lives rather than on the social aspects of college. Compared to their peers without military experience, these veterans also varied considerably with respect to prior academic achievement, marital status, and family considerations.

Frederiksen and Schrader (1951) later confirmed many of Toven's (1945) observations in their large-scale empirical study comparing student veterans to their non-veteran counterparts. In addition to being older and more likely to be married, student veterans demonstrated other marks of maturity that distinguished themselves from their peers, as Frederiksen and Schrader's (1951) large-scale empirical study notes, "[t]hey are a bit more certain of their vocational objectives, they worry less about deciding on a course of study, and they are less concerned about feelings of inferiority and about social adjustment" (p. 27). Further, Frederiksen and Schrader (1951) describe student veterans as more focused on obtaining their degrees given that 40 percent of student veterans expressed intentions to accelerate their college program in order to graduate more quickly compared to just 10 percent of non-veteran students.

Post-WWII student veterans also shared the view that military service, whether in combat or not, enhanced their academic ability while less than a quarter thought it actually eroded their academic ability while evidence suggests a slight advantage over non-veteran peers related to college grades despite having lower pre-college achievement scores (Frederiksen & Schrader, 1951). This advantage may be due to the fact that student veterans also report studying more hours than nonveterans. Student veterans' success countered the expectations of many critics,

including Harvard president James Bryan Conant, who previously had expressed concern with the federal government giving educational benefits for military service rather than academic aptitude (Altschuler & Blumin, 2009).

Three decades later, Vietnam veterans who exercised their GI Bill benefits encountered a very different climate in college compared to their WWII counterparts. After returning from the Vietnam War and starting college, student veterans found an unwelcoming environment where they had to mask their veteran identity and attempt to blend into a hostile college environment (Figley & Leventman, 1980). Despite challenges associated with a more hostile campus environment and the lack of a critical mass of military-affiliated students in higher education, these veterans did as well or better than their non-veteran counterparts in terms of college grades (Joanning, 1975). In the years following the conflict in Vietnam, student veterans tended to shed their military identity as a strategy to blend in, and, in doing so, they hid an identity that could have helped to "enrich the campus through the additional levels and types of diversity represented by their experiences and backgrounds" (Rumann & Hamrick, 2013, p. 305).

After a somewhat quiet period in the decades that followed the influx of Vietnam veterans into colleges and universities, empirical studies focusing on college student veterans once again began to proliferate, as Congress modernized the GI Bill and veterans of the wars in Iraq and Afghanistan (Post-9/11 GI Bill) utilized an improved set of educational benefits that includes a monthly housing and book stipends to pursue a college degree (VA, 2017a). This more recent body of research has focused largely on the transition of veterans into higher education as first-year students or as returning students, and these studies have relied heavily on qualitative methods (DiRamio et al., 2008; Hammond, 2015; Rumann & Hamrick, 2010). While continuing to highlight the seriousness of student veterans documented in earlier studies among

previous generations of veterans who enrolled in college, recently published research also identifies the many challenges faced by this population of students.

The challenges faced by student veterans correspond to the diversity of student veterans themselves. For example, many student veterans frustratingly suffer from the process of being called to active duty after enrolling in college, and this disruption complicates their college socialization and adjustment process (DiRamio et al., 2008). Additionally, as student veterans make the transition into higher education, they often express frustration with the lack of maturity and focus of their peers (DiRamio et al., 2008; Hammond, 2015; Rumann & Hamrick, 2010). Much like their WWII counterparts, today's student veterans perceive themselves as having more discipline than their peers and maintain a stronger focus on completing their degrees. Student veterans also report challenges in trying to avoid awkward or uncomfortable classroom situations arising from their military experience (DiRamio et al., 2008; Hammond, 2015). Student veterans have reported experiencing microaggressions related to others' misconceptions of combat veterans (Hammond, 2015). Similar to Vietnam veterans, these feelings have prompted veterans to attempt to blend in to mask their combat veteran identity, as combat experience has an association with an uneasiness in crowds and a heightened awareness that may serve as a distraction (Rumann & Hamrick, 2010; Hammond, 2015).

One of the few quantitative studies examining the experiences and college outcomes of student veterans identifies a link between stronger academic performance and spending more time preparing for class, more often discussing academic topics outside of the classroom, expressing greater satisfaction with academic advising, and missing fewer classes among student veterans at two-year colleges (O'Rourke, 2013). By contrast, O'Rourke found that gender, combat experience, and branch of service (Army, Navy, Air Force, etc.) to have no significant

correlation with academic achievement. Importantly, compared to high school GPA, O'Rourke (2013) notes that grades earned by veterans while attending military training courses aimed at teaching them skills specific to their military occupation (O'Rourke calls this *military GPA*) correlate more strongly with academic success in college.

In addition to examining correlates of college grades among student veterans, O'Rourke (2013) also investigated factors related to their intent to persist. Student veterans' attitudes towards their military service, operationalized as a composite measure of their opinions on whether their overall military experience was positive or negative, effect of military experience on being a student, impressions of military leadership, and rating of unit cohesion, emerged as the strongest predictor of intent to persist (O'Rourke, 2013). He argues that negative attitudes towards their military service may have caused a "moral injury" (p. 113) leading to psychological challenges that create possible barriers hampering persistence. On the other hand, student veterans expressing positive attitudes towards military service believed that their service was helpful to them as students and ended up even having higher GPAs (O'Rourke, 2013). Given the research design, O'Rourke (2013) acknowledges his inability to conclude causality between student veterans' intent to persist and their attitude toward their military service, yet he attempts to explain the relationship by arguing that post-traumatic stress disorder (PTSD) might be a possible underlying factor. Unfortunately, O'Rourke's own study does not provide adequate evidence that such a possibility exists.

Given the predominance of qualitative studies of student veterans and generally small sample sizes found in the few quantitative studies of this population, disaggregation by demographic characteristics among student veterans remains uncommon. O'Rourke (2013) briefly touched on gender, finding that male student veterans are 17% more likely to persist than

their female counterparts and suggests that further research is needed. Others make a more compelling argument as to why researchers need to disaggregate data on student veterans in higher education:

> Even in our media-rich culture that circulates images of veterans embodying a broad range of demographics, the image of a veteran as male, White, and heterosexual continues to dominate. This stereotype can hinder the acculturation and success of women veterans, veterans of color, and LGBT veteran on campus, and can further exacerbate the barriers that veterans may encounter while transitioning to campus life. (Iverson & Anderson, 2013, p. 105)

Instead, studies have chosen to limit their samples of student veterans to particular demographic groups. For example, Cole-Morton (2013) provides a detailed analysis of a male African American's experience in higher education. Limited by its examination of a single student's perspective, the study describes how its participant experienced frustrations similar to White students involving finances and counting of credits, but also experienced frustrations unique to the color of his skin. For example, he believed that several faculty did not want him in their class because he was Black. Ottley (2014) describes the importance of higher education to returning Black male veterans, how they are underutilizing the GI Bill, and the various barriers preventing from taking advantage of these educational benefits. However, Ottley (2014) did not discuss the experience of Black male veterans once they are enrolled in institutions of higher education.

Baechtold and De Sawal (2009) use past literature to provide an in-depth description of the unique challenges facing female student veterans but acknowledge a lack of empirical investigations of this subset of student veterans. Mainly written for practitioners, the authors

encourage student affairs personnel to be aware of challenges unique to women veterans. They argue that PTSD may affect many of these women student veterans who have an increasing role on the battlefield. However, the stressors that are common to nonveteran female students may seem insignificant to the female veteran due to their experience in the military and/or combat. Mental health and substance abuse issues related to sexual harassment and sexual assault in the military is another topic the authors highlight suggesting that these issues might hamper their transition into college. While Baechtold and De Sawal (2009) provide evidence that significant numbers of women veterans have been sexually assaulted or harassed, they are not able to provide evidence that this is actually a common issue for student veterans.

Finally, Baechtold and De Sawal (2009) discuss the female veteran identify – an identity that was shaped by having to navigate and blend into a largely male-dominated organization. The authors present Abes, Jones, and McEwen's (2007) reconceptualized model of multiple dimensions of identity as a framework for understanding how their military experiences may shape the way they make meaning of their college experience. Baechtold and De Sawal (2009) rely on vivid passages from Herbert's (1998) book, *Camouflage Isn't Only for Combat: Gender, Sexuality, and Women in the Military,* to illustrate how recruits are stripped of their individuality and identity during basic training to become professional soldiers, sailors, airmen, or Marines. For the women servicemembers, it largely means shedding feminine characteristics for more masculine characteristics. The way that women learn to navigate and manage their feminine identity in the military context creates a conflict of identify when they do leave the military and begin to navigate life as a student and, once again, in the role of a woman outside of a male dominated environment.

To assist women student veterans in developing their post-military, student and woman identify, Baechtold and De Sawal (2009) suggest that practitioners should help women student veterans find women role models on campus. They argue that this gender related issue and recommended assistance are different for men because men "are often rewarded by society for displaying strong male characteristics" (Baechtold & De Sawal, 2009, p. 40) that might have been reinforced or increased during military service. Additionally, there are more opportunities for male student veterans to find to find veteran role models on campus. Once again, Baechtold and De Sawal (2009) call for more empirical research on women student veterans while acknowledging that the majority of current literature is restricted mainly to personal stories and anecdotes.

In one of the few empirical studies on female student veterans, Heitzman and Somers (2015) conducted a phenomenological study to examine the experience of 51 female student veterans from a single university. Their findings, albeit limited by a mostly White (80%)[1] sample from a single university, shed light on the experience of this subpopulation of student veterans. Many of the participants reported that they did not have a good relationship with their faculty, staff, or fellow students. In fact, about half reported that they did not have a good relationship with a member of the staff and faculty and a third reported difficulty connecting with other students. Despite the overall lack of connectedness to staff, faculty, and other students, intentions to persist among the group remained high. Heitzman and Somers (2015) attribute this to "a strong personal locus of control and familial expectations of completion" (p. 23). Additionally,

[1] In comparison, only 56.7% of women student veterans identified as White in the National Center for Education Statistics, 2011-2012 Beginning Postsecondary Students Longitudinal Study, First Follow-up (BPS: 12/14).

they determined that prior postsecondary experience, time to plan, and an academic program or major that corresponds to their past military job all positively influence intentions to persist.

In sum, the intensity of interest in veterans' experiences and success in college has oscillated for more than seven decades. Spikes in empirical investigations correspond to re-engagement of the U.S. military in conflicts that produce large numbers of combat veterans and to significant revisions by Congress to the GI Bill. Similarly, higher education researchers and practitioners seek to understand each new generation of veterans, including their unique challenges and ways to best help them earn their degrees. However, the majority historical and contemporary studies of student veterans fail to capture the diversity of the population in terms of race/ethnicity, gender, or even geographical location. Higher education researchers, college and university leaders, state and federal policymakers, and especially student veterans have much to gain from studies of student veterans that also disaggregate these samples by key demographic characteristics.

Understanding the Composition of Veterans Currently Enrolled in College

Today's student veterans represent a diverse group comprised entirely of volunteers who elected to serve in the U.S. military, and many of today's veterans deployed to support both peacetime and combat operations in places like Afghanistan and Iraq. Though the U.S. Code (2011) defines a veteran as a "person who served in the active military, naval, or air service, and who was discharged or released therefrom under conditions other than dishonorable" (Veterans' Benefits 38 U.S.C. § 101, 2011), current student veteran literature regards anyone with past or current military service, combat or otherwise, as a student veteran due to their unique experience and training that distinguish them from other college students (DiRamio et al., 2008, Rumann &

Hamrick, 2010; Vacchi, 2012). Consistent with recent empirical investigations, this study utilizes this broad, inclusive conceptualization of student veterans.

As of 2014, more than two million servicemembers voluntarily served on active duty or as part-time members of the Reserve or National Guard (DoD, 2014; Rostker, 2006). Mirroring the diversity of the U.S. population in terms of race and ethnicity, racial and ethnic minorities comprised nearly a third (29.3%) of the U.S. military, as approximately 17% identified as Black or African American, about 4% as Asian, 2.5% as Multiracial, 1.2% as American Indian or Alaska Native, and about 1% as Native Hawaiian or Pacific Islander with 11.5% describing themselves as Hispanic or Latino (DoD, 2014). The breakdown by sex has been more skewed, as less than one-fifth (16%) of the total military force were women (DoD, 2014). Drawing from this military population, the VA (2017b) reports that one-fifth to one-quarter of student veterans are women, the vast majority are older than the age of 24 (85%), nearly half have family responsibilities, and a remarkable 62% are first-generation college attendees. In other words, student veterans have characteristics that are different from "traditional students;" therefore, the literature on nontraditional students and adaptations of conceptual models developed to explain experiences of "traditional" college students must be considered when examining student veteran experiences, challenges and educational outcomes (Barnett, 2011; Bean & Metzner, 1985; O'Rourke, 2013).

The number of student veterans enrolled at different types and levels of institutions, as well as other data, is lacking (Cate, 2014). However, of 148,399 student veterans enrolled in an institution of higher education between January 1, 2015 and September 1, 2015, about a third (34.2%) were enrolled in public, two-year institutions; about a quarter (24.5%) were enrolled in

public, 4-year institutions; 14.8% in private, 4-year institutions; and another quarter (25.7%) in a for-profit, 4-year institution (Cate et al., 2017).

Student veterans face unique challenges that separate them from their civilian counterparts. Many student veterans come from lower socioeconomic status (DiRamio & Jarvis, 2011; Durdella & Kim, 2012), and they joined the military as a way to escape dire economic situations where job prospects were scarce or undesirable (DiRamio at al., 2008; DiRamio & Jarvis, 2011). Some joined because they did not initially see the value in earning a college degree (Cox, 2011), while others enlisted as a strategy to earn money for college, knowing the generous educational benefits provided by the GI Bill (DiRamio at al., 2008). Having both military service and a college degree typically gives student veterans increased mobility to improve their socioeconomic standing.

Student veterans come to college with a strong motivation to earn their college degree. Age and sometimes experiences in combat contribute to an increasing maturity and seriousness among veterans who are more focused on obtaining their degree and moving on in the shortest amount of time (Toven, 1945; DiRamio at al., 2008). These students commit to their academic studies rather than to campus social activities that typically appeal to other students (Durdella & Kim, 2012). Many have also traveled the world for peacetime or combat operations and have been given high levels of responsibility and significant leadership roles (DiRamio at al., 2008). This experience sometimes leads to situations where student veterans are frustrated by peers who they perceive as lacking discipline or seriousness in completing their degrees (DiRamio et al., 2008; Hammond 2015; Rumann & Hamrick, 2010). However, the relationship between these frustrations and outcomes such as academic achievement or persistence are never explored.

Student veterans face awkward or uncomfortable classroom situations arising from their military experience (DiRamio et al., 2008; Hammond 2015; Rumann & Hamrick, 2010). While many student veterans from the Vietnam era experienced an outright hostile anti-war and anti-veteran atmosphere (Figley & Leventman, 1980), current student veterans face difficult questions or broad accusations by curious students or antagonizing faculty (DiRamio et al., 2008; Hammond 2015; Rumann & Hamrick, 2010). Insensitive questions arising from fellow students can concern whether the student veteran has killed anyone in combat while faculty questions can single out student veterans or question their involvement in controversial wars (DiRamio et al., 2008). These types of interactions can cause student veterans to attempt to mask their veterans identify and attempt to blend in with other students (DiRamio et al., 2008). While the transition from military to civilian life can be difficult (Hatchey et al., 2016), negotiating multiple identities, including hiding an identity, can negatively affect one's psychological well-being (Donahue, Robins, Roberts & John, 1993; Sharma & Sharma, 2010; Suh, 2002). Psychological issues, in turn, can negatively affect academic performance and lead to early withdrawal from college (Gerdes & Mallinckrodt, 1994; Kessler, Foster, Saunders, & Stang, 1995).

Frustrations with peers and faculty may also lead to a diminished sense of belonging, a reduced sense of validation, and less satisfaction with campus climate (Hurtado, Ruiz Alvarado, & Guillermo-Wann, 2015; Hurtado & Carter, 1997; Hurtado et al., 2011; Rendón, 1994), all factors in degree completion for different groups of students (Barnett, 2011; Hausmann, Schofield, & Woods, 2007; Museus, Nichols, & Lambert, 2008). Specific to student veterans, Hammond (2015) stresses that a poor learning environment might translate to lower academic achievement and persistence. Additionally, O'Rourke (2013) found that nearly 90% of his sample rated their educational experience as fair or worse, and he attributes this low rating

partially to unsatisfactory faculty interactions by referencing findings from the National Survey for Student Engagement (2010). In the NSSE report, student veterans in their senior year rated interactions with faculty as significantly lower than nonveterans students. However, O'Rourke (2013) was unable in his study to find a significant relationship between student veterans' low ratings of their educational experience with their intent to persist. Faculty and staff have significant roles in students' lives, but the relationship between faculty and staff interactions and student veteran success needs further exploration.

Student veterans have a desire for improved relationships with faculty and seek faculty who recognize and understand their unique circumstances (DiRamio et al., 2008). However, DiRamio et al. (2008) point to a consistent message received from interviewees that "these students do not desire special status or unusual accommodations, but rather a sense that their professors appreciate their life circumstances, including both health and academic challenges" (p. 95). Nontraditional students in Cox's (2011) book, *The College Fear Factor*, credited their persistence to teachers who could "relate or come down" (p. 120) to their level. Cox (2011) explains that relatability or coming down to students' level means "friendliness, accessibility, and approachability" (p. 121) rather than assigning easier coursework or lowering of standards. Both groups desire teachers who understand them and can relate to their circumstances, but not while expecting them to lower academic standards.

Despite their strong motivation to pursue and intense focus to finish a college degree, some student veterans have reported a decline in their academic skills associated with their time in military (DiRamio at al., 2008). The empirical evidence about differences in college grades based upon students' status as a veteran has been mixed. For example, a study by Durdella and Kim (2012) found that student veterans earn a statistically significantly lower college GPA than

their non-veteran peers, yet the actual gap, although significant, was just .08 points. Durdella and Kim (2012) attributed the gap to differences in work and family obligations. However, family obligations were not included in their model and it is unclear how employment affected the relationship between veteran status and persistence, if at all. Additionally, the study by Durdella and Kim (2012) excluded high school GPA and other critical indicators of academic ability from the regression model, which complicates any conclusion about whether student veterans earn lower grades in college because of something to do with their military experience or because veterans arrived at college with a different academic ability level compared to their non-veteran peers. Given their extended absence from the classroom, student veterans often encounter greater difficulties relearning academic skills or understanding expectations relative to their civilian peers (Durdella & Kim, 2012).

Adding to challenges posed by differences in pre-college schooling and the number of years between finishing high school and starting college, the presence of physical or psychological injuries associated with combat may exacerbate student veterans' often challenging adjustment to college academic life (DiRamio & Jarvis, 2011). Along with physical wounds caused by battlefield wounds, the authors point to the prevalence of post-traumatic stress disorder (PTSD). PTSD symptoms have been found to have a negative, indirect influence on persistence for college students (Boyraz, Granda, Baker, Tidwell, & Waits, 2016). DiRamio and Jarvis (2011) caution that when a student veteran begins college without receiving treatment for these issues, they may find themselves at a significant disadvantage and at risk for obtaining their degrees.

While student veterans certainly share similarities with other students, both traditional or nontraditional, they also have unique backgrounds that distinguish them from others. These

distinct characteristics, perspectives, and life experiences represent critical discussion points that could be incorporated into conversations or professional development workshops aimed at educating faculty, administrators or policymakers about this population of students. The majority of the previously mentioned studies capture compelling portrayals of the student veteran experience in transitioning into and through college. However, they fall short of explaining how different interactions, including interactions with staff or faculty, have affected student veteran persistence in obtaining a college degree. Fortunately, there is a significant body of empirical studies and theoretical frameworks that can help us to understand the factors that may influence student veteran to continue in their studies or drop out.

Theoretical Framework

In recognition of outdated models describing how college affects students that favor traditional students (e.g., aged 18-24, mostly White, predominantly enrolled full-time, childless), Rendón (1994) argues that shifting campus demographics demand a response that meets the needs of more diverse student bodies that are less traditional than ever before. Colleges and universities continue to favor traditional students even though the higher education landscape has become more diverse in terms of gender, race, religion and sexual identity. While conducting research for the *Transition to College Project*, Rendón (1994) identified an important phenomenon occurring where students with low confidence in their academic ability unexpectedly gained confidence to learn and succeed in college. Further exploration determined that the "intentional, proactive affirmation of students" (Rendón Linares & Muñoz, 2011, p. 12) or validation, from faculty, staff, and significant others is likely key to this rapid transformation (Rendón, 1994).

Ultimately, nontraditional students can be "transformed into power learners through in- and out-of-class academic and/or interpersonal validation" (Rendón, 1994, p. 37). Validation helps reshape confidence in their academic abilities leading to changes in attitudes, behaviors, and, ultimately, achievement even in the absence of social and academic integration (Rendón, 1994). Rendón further posits that when students receive validation, they feel that the experiences and skills they bring to college have value, they develop a sense of belonging to the campus, and they no longer feel like imposters (Rendón, 1994, p. 44).

Rendón (1994) relied on the perspective of feminist scholars Belenky, Clinchy, Goldberger, and Tarule (1986), to analyze interview transcripts of 132 students from a diverse set of institutions and determine "how students who come to the academy consumed with self-doubt or expecting to fail are being transformed into students excited about higher learning" (Rendón, 1994, p. 36). In *Women's Way of Knowing*, Belenky et al. (1986) introduce five learning perspectives: silence, subjective knowing, received knowing, procedural knowing, and constructed knowing; perspectives that range from women as powerlessness in learning (silence) to the creators of knowledge (constructed knowing). While Rendón's initial article provides a brief glimpse into how Belenky et al. (1986) influenced her analysis, Rendón Linares and Muñoz (2011) revisit the subject and provide greater insight:

> In short, these women had moved from relying solely on external "authorities" for reliance on truth to acknowledging and working with an internal authority which recognized that truth and understanding relied on considering multiple perspectives, including one's own personal experience. What had transformed these women was affirmation provided by maternal or nurturing authorities (in these cases: therapists, peers, mothers, sisters, grandmothers, and/or close friends) ...External confirmation from

> nurturant authorities was helpful in order to get women to focus on their internal, subjective views about their ability to become knowers in their own right. While women relied on external agents as powerful knowledge bearers, they also recognized the self as a shared authority in meaning making and knowledge production. (p. 16)

Students can feel validated outside the walls of a classroom and from other campus community members in addition to faculty. Any source of validation is valuable when it counters invalidating experiences a student may face inside or outside of the classroom (Rendón, 1994). Sources of validation outside of class be just anyone involved in a student's life to include staff or faculty, parents and significant others, classmates and friends, coaches. However, staff and faculty are the most pertinent sources in the study of higher education because colleges and universities can directly control the training and resources available to members of their community.

Extending Rendón's (1994) findings, Barnett's (2011) quantitative study links faculty validation with persistence for groups of students varying by age, gender, and race/ethnicity within a single community college. Guided by Tinto's (1993) interactionalist theory of college student departure, Barnett's (2011) variable selection focused on the specific relationships between faculty interactions, academic integration, and intent to persist while also incorporating a measure of validation from faculty. The 27-item factor include students' responses to survey questions like "I feel accepted as a capable student by my instructors," and "[m]y instructors provide lots of written feedback on the assignments I turn in" (Barnett, 2011, p. 107). Her study determined that higher levels of faculty validation significantly contribute to feeling more integrated into campus life and expressing moderately stronger intentions to persist for all groups; however, these results differed when disaggregating the data by key demographic

characteristics. For example, women and Hispanic students derive greater benefits from validation in terms of their intentions to persist compared to their male and Black, White, and Asian counterparts.

While Barnett's (2011) study makes a number of advancements in linking the concept of validation to students' intentions to persist, its oversight of critical external forces related to persistence decisions and sole focus on validation originating from faculty constrain its overall contribution to the literature. First, it does not consider important aspects of the student college experience that may also influence decisions to remain in college. For example, Tinto (1993) includes commitments external to the college environment in his model while Bean and Metzner (1985) posit that external "pull" factors are the most important variables in nontraditional students' decisions to remain in college. More complete statistical models should consider these variables when examining groups of nontraditional students to have a more accurate understanding of the relationship between any variable's influence on a student's decision to leave college; without these measures, statistical models may overstate the salience of validation as a predictor variable.

Second, Rendón (1994) excludes few people from her list of validating agents, but Barnett (2011) focuses solely on faculty. While this narrow focus allows for concentrated inquiry, important validating agents, such as the staff, are excluded from her measure of validation. Again, her study may overstate the extent to which validation from faculty relates to students' intent to persist. At the very least, Barnett (2011) would have been more complete in including faculty and staff validation occurring both inside and outside of the classroom. Finally, this study examines only a single community college making it difficult to generalize its findings

or recommendations to other populations of students, particularly those who enroll at four-year institutions.

Using survey data from a nationwide set of community colleges and public and private four-year institutions, Hurtado and colleagues (2011) developed quantitative measures of academic validation in the classroom and interpersonal validation to assist researchers in examining the influence of validation measures on college experiences and outcomes. By analyzing data provided by the Diverse Learning Survey (DLE) – administered by the Higher Education Research Institute (HERI) – Hurtado et al. (2011) found that the survey items they used "statistically represent latent factors of academic validation in the classroom and general interpersonal validation" (p. 64). Survey items involving validation in the classroom include "[i]nstructors provided me with feedback that helped me judge my progress," "I feel like my contributions were valued," and "[i]nstructors encourage me to ask questions and participate in discussions" (Hurtado et al., 2011, p. 63). Hurtado et al. (2011) also state that studying validation "shifts the focus from student behaviors such as engagement (or lack of engagement) to how students experience the learning environment and to improvements that can be made in how educators shape student experiences" (p. 69). Much research is focused on changing student behavior without regard to the changes that staff and faculty can be making to adapt to the changing higher education landscape where nontraditional students are becoming more mainstream.

Following Byrne's (2006) protocol for constructing validation measures, Hurtado et al. (2011) used confirmatory factor analysis (CFA) to specify and confirm models for students of color and White students. They discovered that there are differences in the ways in which students of color and White students perceive validation even though their constructed measures

of validation proved appropriate for both groups. For example, the item, "[f]aculty empower me to learn here" (Hurtado et al., 2011, p. 63) was included in both classroom and interpersonal validation for students of color, but not for White students. Additionally, they found that White students report higher levels of validation than students of color, which supports previous research describing more intense feelings of isolation among students of color, more frequent negative experiences in class, and greater suffering associated with feeling prejudice or bias from faculty and staff relative to their White counterparts.

Differences in how students experience validation and how such measures are constructed between demographic groups underscore the need for further disaggregation. Hurtado et al. (2011), acknowledging their study's own limitation, recommend that researchers acknowledge the potential differences between subgroups when conducting future studies. They were unable to disaggregate racial/ethnic groups beyond "students of color" and did not consider differences between men and women students. Aside from the need for further disaggregation, Hurtado et al. (2011) provide a comprehensive examination of the inside and outside of class interaction between students and staff or faculty that may involve validating experiences. Although Rendón (1994) provides lengthy discussion on the impacts of validation from parents, friends, mentors, etc., Hurtado et al. (2011) highlight practical measures of faculty and staff behaviors that institutions can influence. Certainly, external sources of validation (parental, spousal, etc.) could affect whether a student remains in college especially if they have obligations that could either pull them from school or encourage them to stay the course.

Rumann and Bondi (2015) use Rendón's theory of validation as a framework to offer strategies for staff, faculty, and other members of the campus community to engage student veterans inside or outside of the classroom. They argue that student veterans are nontraditional

students who fit into the group for which validation theory was developed. Further, they point out the multitude of identities contained within the heterogeneous student veteran population, many of which are the same marginalized populations that Rendón (1994) directly addresses in her description of validation theory. However, Rumann and Bondi's (2015) argument lacks empirical evidence explicitly linking validation theory to student veterans or a sufficient rationale about how the theory's components might differ for this population. Instead, they offer unsubstantiated claims such as "[v]eterans may have received invalidation specifically related to their veteran status (e.g., messages such as 'you probably rely on your brawn instead of your brain')" (Rumann & Bondi, 2015, p. 327). This study overcomes Rumann and Bondi's (2015) lack of empirical data to provide evidence regarding the appropriateness of validation as a concept in studying the phenomenon of college persistence among student veterans.

Despite the lack of empirical data testing the application of validation theory on a sample of student veterans, the real strength of Rumann and Bondi's (2015) chapter comes in its description of student engagement strategies where they offer tangible recommendations for staff, faculty, and administrators to follow in order to increase student veteran engagement. In this generalized application of Rendón's (1994) validation theory, the authors recommend creating mentoring programs where student veterans already regularly spend time such as the cafeteria, student veterans' office, or other already established places. Rumann and Bondi (2015) also encourage faculty to allow student veterans time to reflect and discuss how concepts learned during lecture relate to their daily lives or past experience. Balancing this recommendation with the danger of singling out student veterans, the authors provide guidance as to how faculty may effectively employ this strategy without making a student veteran uncomfortable. Such delicate situations provide additional evidence of the need for a more thorough understanding of how

validation relates to the success of college student veterans. Rather than just generalizing an entire theory and its related application to an entire population of students, researchers must determine how student veterans experience validation, how these experiences with validation compare with other students from similar, non-military backgrounds, and whether validation differentially relates to student veterans' success in college.

Understanding the importance of validation and the extent to which its effects vary by nontraditional student groups may lead to improved support for student veterans. This group is diverse and has already voiced concern with past faculty interactions. Coupled with a relevant conceptual model involving student persistence, a more complete understanding of the student veteran experience in higher education is possible.

Conceptual Model

The field of higher education has not shortage of models attempting to explain the phenomenon of student departure from college (e.g., Bean, 1980; Bean & Metzner, 1985; Nora, 2003; Seidman, 2012; Tinto, 1975, 1987, 1993). Perhaps most prominent, Tinto's (1993) revised model incorporates five categories of factors that influence a student's decision to depart or remain at an institution. Along with pre-college characteristics, Tinto's (1993) argues that student persistence depends, largely, on integration with the social and academic environments of their college or university. However, integration is reduced when there is "[i]ncongruence, or what is sometimes referred to as a lack of institutional fit" (Tinto, 1993, p. 50). Students determine whether they fit with institution and how much they would like to be engaged. Isolation also reduces integration and refers to situations where there is a lack of opportunities for integration (Tinto, 1993). Academic integration refers to the formal and informal interactions occurring with staff and faculty within the formal educational centers (i.e., classrooms,

laboratories, etc.) (Tinto, 1993). Social integration includes informal interactions with peers, interactions with staff and faculty, and participation in extracurricular activities (Tinto, 1993).

More specifically, Tinto (1993) argues that the development of friendly, social relationships with peers is positively associated with persistence and the lack of supportive groups is associated with dropping out. Similarly, extracurricular participation and positive interactions with staff and faculty increase the probability that a student will remain in school. Although not explicitly stated, staff and faculty can use informal and formal interactions with students to employ validating actions and foster more positive relationships (Rendón, 1994).

Integration is reduced when there is incongruence and isolation with incongruence relating to a person's "fit" with the institution in terms of "needs, interests, and preferences" (Tinto, 1993, p. 50). Similarly, in the field of organizational behavior, researchers have determined that the fit between an individual employee and their professional workplace predicts job satisfaction and intent to leave the workplace (O'Reilly, Chatman, & Caldwell, 1991). Schmitt, Oswald, Freide, Imus, and Merritt (2008), drawing from the organizational perspective while also incorporating many of the same variables as Tinto (1993), determined that students' perceptions of their fit with the academic environment indirectly affects their intention to drop out, their GPA, and absenteeism. Higher education researchers have included students' sense of belonging as a key variable in measuring students' perceptions of fit and predicting decisions to dropout (Bean, 1985; Hurtado & Carter, 1997; Rootman, 1972; Spady, 1971).

While Tinto (1993) emphasizes social and academic integration, Bean and Metzner (1985) developed a conceptual model for nontraditional student attrition in which they argue that social integration is not as important to nontraditional student persistence as external environmental factors – employment, family responsibilities, finances, and outside

encouragement – that the institution has no control over but can pull a student from school. Students are categorized as nontraditional if they meet any of the following characteristics: commute to school, older than 24 years of age, or attend school part time (Bean & Metzner, 1985). These same characteristics define most veterans entering higher education (VA, 2016), leading some scholars to use Bean and Metzner's (1985) conceptual model for studying student veteran persistence. For example, O'Rourke (2013) applied this conceptual model to his study of student veterans' persistence at four community colleges in Southern California, but also introduced other variables unique to military veterans including whether or not the student had served in a combat zone.

While Bean and Metzner (1985) largely excluded social integration from their model[2], contemporary scholars have found, through qualitative studies, that student veterans are often negatively affected by peer and faculty interactions (DiRamio, Ackerman, & Mitchell, 2008; Hammond, 2015; Rumann & Hamrick, 2010). Hammond (2010) argues that these negative interactions may lead to a sense of isolation which, in turn, "could lead to decreased enrollment and present a risk to persistence" (p. 15). However, no known study has attempted to determine, empirically, if any of these interactions are related to student veteran persistence. Future studies of student veteran persistence, including this one, must consider comprehensive models that incorporate environmental factors, social and academic integration, and factors that specifically consider diverse groups of students.

Nora's (2003) student engagement model combines elements from several different theoretical and conceptual models. Nora and Crisp (2012) explain the evolution of the model,

[2] Bean and Metzner (1985) provided an opportunity for researchers using their model to include social integration by incorporating a placeholder or "provision" (p. 520).

starting with the overlap from Tinto (1975), Bean (1985), and Nora and Cabrera (1996), along with their unique elements. In a study salient to the formation of Nora's (2003) model, Cabrera, Nora and Castañeda (1993) combined Tinto's (1975, 1987) model with Bean's (1985) model to test a hypothetical model of persistence using structural equation modeling. The results of the study underscore the importance of environmental factors, together with individual and institutional factors, in providing a comprehensive explanation of student persistence.

Other empirical studies informed the further additions to the model to include organizational attributes (Braxton & Brier, 1989), in the form of institutional commitment; sense of belonging (Hurtado & Carter, 1997); and validating experiences (Rendón, 1994). Braxton and Brier (1989) felt that Tinto's (1975) early model fell short by only examining the interaction between a student and their environment and proved that organizational attributes contribute to students' decision to drop out. Hurtado and Carter (1997), on the other hand, felt that Tinto's (1993) model did not account for racially and ethnically diverse students – "underlying the concept of acculturation is the assumption that the cultural differences of ethnic groups should be diminished and that to be successful, minority students must adopt the values of the dominant college environment" (p. 327). In response, they developed and tested a new measure, *sense of belonging*, to account for a student's sense of membership rather than participation in different events. Rendón (1994), as explained earlier in the chapter, further developed the importance of faculty and staff interactions by introducing the role that faculty/staff-initiated validation plays in transforming nontraditional students.

With all of its elements, Nora's (2003) model, introduced in a study of Hispanic student persistence, provides the most comprehensive conceptualization for understanding persistence of diverse and nontraditional groups of students such as student veterans. Nora's (2003) final model

includes six major categories: precollege factors and pull factors, sense of purpose and institutional allegiance, academic and social experiences, cognitive and noncognitive outcomes, goal determination and institutional allegiance, and, finally, persistence. In Chapter 3, I describe how the specific measures available in the DLE dataset map onto these conceptual blocks and also provide additional context as to the rationale for organizing the variables for this study in these discreet blocks.

Conclusion

Throughout this chapter, I have provided evidence that, despite their enrollment growth and the large taxpayer investment they represent, student veterans remain an understudied group within the higher education literature. Current research on this population suggests new examinations of student veterans need to undertake more varied approaches. Research designs that rely upon quantitative methods allow for more generalizability within this population, enabling investigators to assess the extent to which findings related to the student veteran experience in college identified in qualitative studies continue to hold across a larger, broader sampling of this population. Additionally, quantitative studies with sufficient samples enable further disaggregation by demographic characteristics (e.g., race/ethnicity, sex, first-generation status), and such approaches can offer insight as to how the diversity of the student veteran population relates to their college experiences, perceptions, and outcomes. Other advancements relate to incorporating measures of student veterans' connectedness to the institution when examining achievement or persistence as an outcome. This study aims to address each of these objectives through its use of a multi-institutional matched sample of student veterans and their non-veteran peers, and the following chapter presents a detailed accounting of this study's dataset, variables, and analytic approach.

CHAPTER 3: METHODOLOGY

Drawing upon three waves of cross-sectional data collected from the Higher Education Research Institute's (HERI) Diverse Learning Environments (DLE) survey, this study used structural equation modeling to estimate the extent to which student veterans' sense of validation correlates with their intentions to persist in college. Combining data from the 2015, 2016, and 2017 administrations of the DLE survey yielded a substantially larger and more diverse sample of student veterans than previous studies. The benefit of a larger sample size associated with combining three waves of data was offset by the constraints associated with changes to survey item responses for veteran status and intent to persist.

Table 3.1 shows the number of part-time and full-time student participants and their respective institutions for the 2015, 2016, and 2017 DLE survey administrations. This chapter provides details on the DLE instrument, the survey data and sample, key variables that were tested, and the particular descriptive and inferential analyses used to address each of the following four research questions:

1) How do bachelor's degree-seeking students with current or prior military service compare with their peers who have not served in the military with respect to demographic characteristics and pre-college experiences?

2) To what extent do the structural properties of established latent measures of validation for a general population of college students also hold for student veterans?

3) Controlling for other demographic characteristics and college experiences, to what extent do measures of validation and identification as a veteran explain students' intentions to persist?

4) To what extent does the model that predicts intent to persist for student veterans also fit for a sample of nontraditional students?

a) Does race/ethnicity moderate the relationship between validation, veteran status, and intent to persist?

b) Does sex moderate the relationship between validation, veteran status, and intent to persist?

Table 3.1

Number of Four-Year Institutions and Participants for the 2015, 2016, and 2017 Administrations of the Diverse Learning Environments Survey

Group	2015	2016	2017	Total
Number of Institutions	25	25	24	74
Total Respondents	11,878	18,670	13,085	43,633
Student Veteran Respondents	321	387	365	1,073

Note. Only part-time and full-time students from four-year colleges and universities are included in this table. The DLE survey is also administered to students at two-year institutions; however, student persistence at two-year institutions is not within the scope of this study.

After preparing the data for analysis, I used a variety of descriptive statistics to provide a profile of the student veteran sample. I used confirmatory factor analysis (CFA) to address the second research question to evaluate the adequacy and appropriateness of Hurtado et al.'s (2011) validation measures, which they tested using data from students enrolled at broad access colleges and universities, when applied to a sample of student veterans. After arriving at a well-fitting measurement model, testing of the hypothesized structural model using structural equation modeling (SEM) software addressed the third research question. I constructed several sub-models to answer the fourth research question to determine whether distinct characteristics, perceptions, and experiences correlate with student veterans' intentions to persist or whether the factors related to persistence intentions operate similarly for student veterans and their nontraditional, non-veteran counterparts.

Data and Sample

The DLE survey originated from a project that "sought to address the key areas of climate, practices, and outcomes through assessment development and policy-minded training research to advance diversity and equity in higher education" (Hurtado & Guillermo-Wann, 2013, p. 5). HERI partners with two- and four-year higher education institutions to administer the DLE survey each year, and the instrument includes items intended to measure broader concepts related to campus climate, including sense of belonging, validation, academic and co-curricular experiences with and exposure to diversity, and perceptions of and satisfaction with how campuses address issues related to diversity on campus (Hurtado & Guillermo-Wann, 2013; HERI, 2017).

To prepare the combined dataset for analyses, I took several steps to ensure it captured an appropriate sample of student veterans and their non-veteran counterparts. First, I included only part-time and full-time students from four-year colleges and universities. While two-year institutions participate in the DLE survey, student persistence at two-year institutions is not within the scope of this study. Second, I eliminated 484 student veterans who identified as a fourth- or fifth-year senior in order to eliminate the possibility that graduation was not the reason students did not intend to return for the fall term. This sample restriction represents a limitation of using an existing survey instrument, as the DLE survey does not specify degree completion as a reason for their planned departure. Third, I excluded 29 student veterans with missing data about their sex, age, race/ethnicity, high school GPA, and whether or not they have children, as these measures served as the foundation for creating a matched sample as discussed later in this chapter. Fourth, I excluded 21 students missing responses on their plans for the following fall,

which represents the outcome of interest. At the completion of these steps, the sample included 539 student veterans.

I imputed missing data for other variables using the maximum likelihood method of Expectation-Maximization (EM) procedures (Cox, McIntosh, Reason, & Terenzini, 2014; Little & Rubin, 2002). This method overcomes the generation of biased estimates and low standard errors typically seen when using mean substitution, regression, and other methods (Cox et al., 2014) and is appropriate when conducting analyses using SEM (Bentler, 2006; Savelei, 2010). Additionally, EM is an appropriate method for dealing with data that is either missing completely at random (MCAR) or missing at random (MAR) (Cox et al., 2014; Little & Rubin, 2002; Savalei, 2010).

To more fairly assess differences between student veterans and non-veteran students, I matched each student veteran in this refined dataset with a non-veteran peer who shared a similar set of key characteristics using propensity score matching (PSM). I took this step to ensure I was comparing groups that had similar demographic backgrounds, life experiences, and pre-college preparation, which enables this study to be more confident in making inferences about differences between student veterans and their non-military affiliated counterparts (Rosenbaum & Rubin, 1983). I matched student veterans with their non-veteran peers by sex, age (24 years of age and under or 25 years of age and older), self-identification with a racial/ethnic group (Black, Latino/a, Native American, Asian, White, etc.), high school GPA, and whether they reported having children. Using the predicted probability of being a student veteran, one-to-one matches of student veterans and non-veteran students were created using a tolerance of ±0.05 (Rosenbaum & Rubin, 1983; Rubin & Thomas, 1996; Kurth et al., 2006). While closer matches (i.e., ±0.01) can be used, tolerances of ±0.05 are common among studies in the social sciences

and reduce the number of unmatchable individuals (Kurth et al., 2006). Tests of the sensitivity of the tolerance threshold suggest statistically similar results whether analysts set the tolerance at ±0.01 or ±0.05 (Kurth et al., 2006). Additionally, matches of non-veterans were limited to institutions with veterans from the sample.

Consistent with recent student veteran literature (DiRamio et al., 2008, Rumann & Hamrick, 2010; Vacchi, 2012; Vacchi & Berger, 2014), participants who self-identified as being Active Duty members, members of the Reserve or National Guard, or students who have been discharged from service were selected for this study's sample of student veterans. I coded respondents as being a non-veteran student if they marked "none" or "ROTC, cadet, or midshipman at a service academy" for military status. This study excluded ROTC and service academy cadets and midshipmen from the student veteran sample because their military socialization is assumed to be limited or unique in comparison to other military connected students.

The final analytic sample for the study was determined after matching student veterans with their non-military affiliated counterparts. Applying the principle of common support requires that each group have a similar range of propensity scores (Heckman, Lalonde, & Smith, 1999). PSM analyses revealed propensity scores for some student veterans to be of such a large magnitude that no comparable non-veteran students were appropriate to use as matches; therefore, eight student veteran cases could not be matched based upon the principle of common support. The final matched sample used for analyses, included 539 student veterans and 531 non-veteran students.

Measures of Validation

This study tested two distinct measures of validation developed and confirmed by Hurtado et al. (2011) based upon data collected during the pilot administration of the DLE survey in 2010. The first measure developed from the pilot study data, *academic validation in the classroom*, specifically focuses on "the extents to which student views of faculty actions in class reflect concern for the academic success" (Hurtado & Guillermo-Wann, 2013, p. 15), and the second measure of validation, *general interpersonal validation*, represents "students' view of faculty and staff's attention to their development" (Hurtado & Guillermo-Wann, 2013, p. 15). Hurtado et al. (2011) developed these initial latent measures of validation by analyzing a more generic sample of college students enrolled at broad access institutions. Noting the variation by race/ethnicity in how students experience validation, Hurtado et al. (2011) encourage researchers to critically examine the application of this construct to various student subpopulations at different types of institutions.

This study followed the methodological process used by Hurtado et al. (2011) for developing and testing the two previously named latent factors or measures - *academic validation in the classroom* and *general interpersonal validation*. These latent factors align with Rendón's (1994) theory by incorporating survey items measuring the ways in which validation is initiated by faculty in the classroom and by both faculty and staff outside of the classroom while also centering on academic development or "personal and social adjustment" (Rendón, 1994, p. 42). Rendón (1994) does not limit validating agents in students' lives to staff or faculty, as she also includes family, friends, significant others, coaches, and anyone else in contact with a student as playing a role in validating students' experiences. Given the focus of this study and the limited range of items on the DLE survey connected to perceptions of or experiences with

validation, this study emphasizes items assessing how students perceive faculty and staff as validating their experiences and ideas inside and outside the classroom.

Data analysis for validation measures. First, I examined data for variables that violate the normality assumption by examining skewness and kurtosis estimators and tests within EQS (Bentler, 2006; Byrne, 2006; Raykov & Marcoulides, 2006). Specifically, Byrne (2012) warns that multivariate kurtotic data – "situation where the multivariate distribution of the observed variables has both tails and peaks that differ from those characteristics of a multivariate normal distribution" (p. 98) is concerning for SEM methodology and may lead to problematic interpretations of test statistics. EQS provides Mardia's normalized estimate as a measure of kurtosis and values greater than 3 indicate nonnormality (Bentler, 2006). Fortunately, statisticians have developed procedures to deal with nonnormal distributions (Asparouhov & Muthén, 2016; Satorra & Bentler, 1988, 1994), and this study followed best practices. Specifically, robust corrections to standard errors and test statistics, such as the Satorra-Bentler (S-B) scaled χ^2, are regularly employed to account for nonnormality in data (Bentler, 2006; Byrne, 2006; Satorra & Bentler, 1988, 1994; Savalei, 2014). Throughout this study, I used robust corrections to account for both nonnormality of data and for the inclusion of categorical variables in the analyses (Savalei, 2014). ROBUST options in EQS yielded these corrections to test statistics and goodness-of-fit indices (Bentler, 2006; Byrne, 2006).

After examining data for normality and determining requirements to use robust corrections, I conducted confirmatory factor analysis (CFA) using maximum likelihood estimation with robust correction by building a measurement model in EQS for each of the two matched groups: student veterans and non-veteran, nontraditional students. Researchers use CFA when they have an understanding of an underlying latent variable structure, or a priori

knowledge, based on theory and/or empirical research (Byrne, 2006). In this study, Rendón's (1994) theory and the empirical research conducted by Hurtado et al. (2011) provided the basis for hypothesizing a two-factor structure: academic validation in the classroom and general interpersonal validation. Figure 3.1 provides an illustration of this hypothesized two-factor CFA model of validation, which formed the baseline measurement model for calculating initial goodness-of-fit statistics when applied to the separate samples of veterans and non-veterans. Since the initial development and confirmation of the academic validation factor from the DLE survey, HERI has removed two of the items comprising the original factors; therefore, the hypothesized measurement model for this study already diverges from the Hurtado et al. (2011) confirmed factor structure.

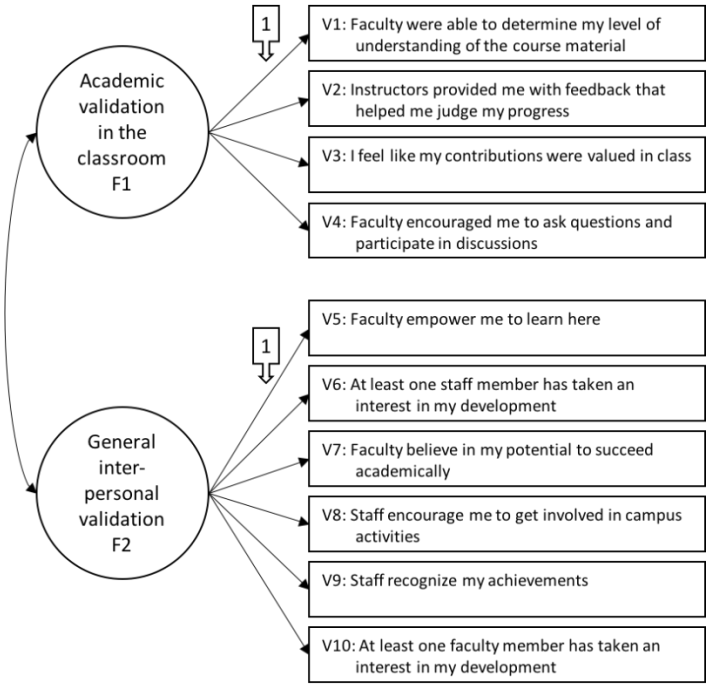

Figure 3.1. Hypothesized validation factor structure with circles depicting the two unobserved latent variables or factors, academic validation in the classroom and general interpersonal personal validation, and rectangles representing observed variables. Callout boxes represent parameters fixed at 1.0.

Testing for the validity of each group's hypothesized two-factor structure allowed me to determine the extent to which the factor structure depicted in Figure 3.1 adequately fits the data for a sample of student veterans and for a sample of non-veteran, nontraditional students and to make adjustments accordingly. I evaluated model fit using the S-B χ^2 goodness-of-fit statistic. The normal χ^2 goodness-of-fit statistic "assesses the magnitude of discrepancy between the sample and fitted covariance matrices" (Hu & Bentler, 1999, p. 2) and the S-B χ^2 applies the scaling correction for nonnormality of data discussed previously. The S-B χ^2 goodness-of-fit statistic was supplemented by fit indices, which "quantify degree of fit along a continuum" (Hu & Bentler, 1999, p. 2). The Comparative Fit Index (CFI), the Nonnormed Fit Index [NNFI; synonymous with the Tucker-Lewis Fit Index (TLI)], and Root Mean Square Error of Approximation (RMSEA) provided goodness-of-fit statistics on the specified models (Bentler, 2006; Byrne, 2006; Hu & Bentler, 1999). Fit indices only indicate the strength of fit and require researcher judgment to determine model misspecification (Byrne, 2006); however, Hu and Bentler (1999) recommend specific cut points for each index. They recommend a value greater than .95 for the CFI and TLI and a value less than .06 for RMSEA, and other studies in the social sciences have largely adopted these rules of thumb (e.g., Hooper, Couglan, & Mullen, 2008; Hurtado et al., 2011; Museus, Nichols, & Lambert, 2008; Schreiber, Nora, Stage, Barlow, & King, 2006).

The Lagrange Multiplier (LM) and Wald (W) tests indicate which specific parameters in the model should be modified to improve the fit of the model to the data (Bentler, 2006; Byrne, 2006). The LM test in EQS indicates which parameters, when added, will improve fit and also provides the magnitude of expected reduction in χ^2 (Bentler, 2006; Byrne, 2006). The Wald Test, on the other hand, indicates which parameters, when dropped from the model, will reduce

model misspecification. Together, goodness-of-fit indices, modification tests, and knowledge of prior research and theory informed my model modification decisions (Byrne, 2006; Hurtado et al., 2011). The factor structure shown in Figure 3.1 was modified to improve overall fit for each group and served as the baseline measurement models for the next step of testing for invariance.

Testing invariance of measurement models between groups. While separate baseline measurement models for each group show how the structural form of each measure differs for student veterans and nonveteran students, multi-step invariance testing allows analysts to determine whether survey items have the same meaning and importance for each group of students (Byrne, 2006). First, I created a *configural model* that integrated the baseline models of both groups, developed previously, into a single file. This allowed me to estimate parameters for both groups simultaneously and to develop a multi-group baseline model in which to compare with subsequent models (Byrne, 2006). At this point, no constraints were imposed and a single set of fit indices were acquired to determine how well the multi-group model fits the data.

With the configural model established, I tested for invariance of factor loadings and error variance and covariances by adding equality constraints for parameters that were similar across the two groups (Byrne, 2006). That is, I set similar constraints equal to one another to determine whether they operate similar or differently for each group. Parameters that have a statistically significant ($p<.05$) univariate χ^2 are considered to be noninvariant (not equal). Finding differences between groups suggests possible differences between student veterans and their non-veteran peers in how they perceive or derive meaning from the experiences represented in the measurement model. By contrast, no differences between groups may lead to a conclusion that a single two-factor structure best fits the data for nontraditional students.

In sum, CFA within SEM allowed me to test and refine a theoretically informed factor structure for validation for student veterans and non-veteran, nontraditional students. This phase of the research design provided an opportunity to examine the similarities and differences in how these two groups of students perceived and experienced behaviors of and interactions with faculty and staff at their institutions. Establishing a measurement model that appropriately reflects the structure of the latent measure of validation also presented an opportunity to examine whether validation has an association with student veterans' intent to persist to the next term of their degree program. In the next section, I elaborate on the variables and procedures that aimed to ensure this relationship is accurately depicted for various groups of student veterans.

Validation and Intent to Persist

The latent measures for validation from the measurement model were combined with other latent constructs and observed variables from the DLE survey in a structural equation model examining the correlates of students' intent to persist. Figure 3.2 replicates Nora's (2003) model of student engagement; this model informed the selection of variables representing pre-college factors and pull factors, initial commitments, academic and social experiences, cognitive and non-cognitive outcomes, final commitments, and reenrollment in higher education institution.

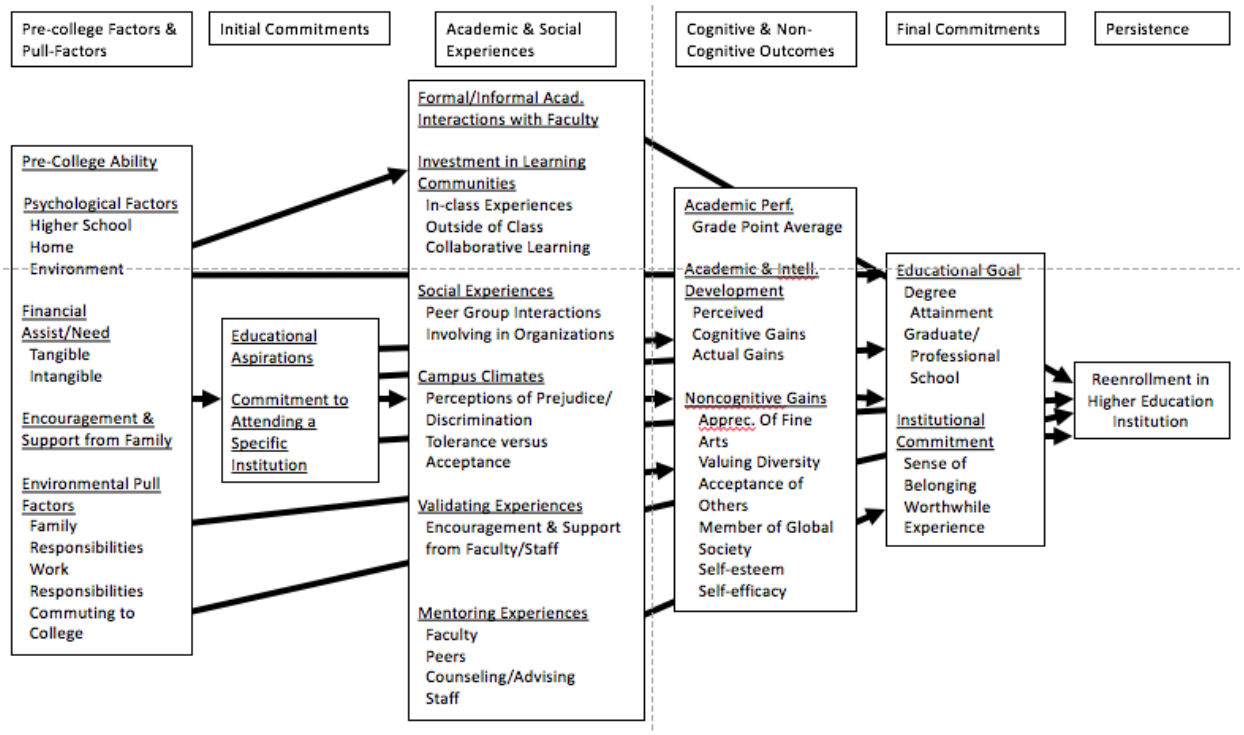

Figure 3.2. Nora's (2003) conceptual model of student engagement used in understanding student persistence. This model also depicts theoretical relationships between six major groups of variables and includes validating experiences by staff and faculty.

Variables selection for structural equation model. Although an objective measure of whether students re-enrolled in the subsequent fall term in the year they completed the DLE survey would be preferable, these data were not available within the DLE dataset. Instead, this study uses a dichotomous variable derived from items representing students' *intent to persist*: students who reported that they intend to return to their current institution the following fall are considered as likely to persist. By contrast, students who plan to attend a different institution, have no plans to enroll in higher education, or feel unsure about where and whether they will attend college in the fall are coded as not likely to persist at their current institution. Variable definitions and coding are shown in Appendix A, and items constituting constructed factors are shown in Appendix B.

Demographics, pre-college experiences, and "pull" factors. Students' demographics (e.g., gender, race/ethnicity) and precollege experiences and expectations (e.g., high school grades, educational goals) may explain decisions about persistence, especially beyond the first year of college (Nora & Crisp, 2012). Among students in their second year, African American and Hispanic students are more likely to withdraw from college than their White or Asian American counterparts (Nora & Crisp, 2012). Older students, those who have a spouse, and first-generation students have significantly higher withdrawal rates than younger, single, or continuing generation students, respectively (Nora & Crisp, 2012). This study considered age, gender, race, enrollment status (part-time vs. full-time), institutional type (two-year or four-year; public vs. private), first-generation status, and high school GPA to account for the variation in demographic characteristics, pre-college experiences, and institutional differences within the sample.

Institutions typically have limited control over environmental "pull" factors, which may "pull" a student to drop out of college (Bean & Metzner, 1985; Nora, 2003; Nora, Cabrera, Hagedorn, & Pascarella, 1996; Nora & Crisp, 2012). Bean and Metzner (1985) consider environmental factors to be among the most important predictors of nontraditional student persistence due to these students' limited contact with the college environment and increased commitments off-campus. Nontraditional students are more likely to have increased responsibilities off-campus that, without a clear counter-balance clearly connected to campus (e.g., clubs, campus programming), typically contribute to their departure. These responsibilities include work and family, where long hours working or taking care of children may pull a student away from focusing more exclusively on academics (Nora et al., 1996; Nora & Wedham, 1991).

Additionally, along with encouragement from family, financial concerns hold particular salience in students' intentions to persist (Cabrera, Nora, & Casteñeda, 1993; Nora et al., 1996).

Academic and social experiences. Nora (2003) includes formal and informal interactions with faculty, involvement in learning communities, social experiences, campus climate, validating experiences, and mentoring experiences as important factors representing academic and social experiences. Central to this study are measures of validating experiences, operationalized by the two-factor measurement model tested in the preceding phase of the study.

Second, I operationalized campus climate via several HERI factors. Hurtado, Alvarez, Guillermo-Wann, Cuellar and Arellano (2012) argue that campus climate measures are often overlooked in studies on student persistence. However, they highlight a study by Museus, Nichols, and Lambert (2008) as an exception to this rule, as the authors concluded variation by race/ethnicity in the indirect effects of campus racial climate on degree completion. In their study, campus climate was operationalized as a dichotomous variable measuring students' satisfaction with their campus racial climate. Additionally, a subsequent study determined that a negative campus climate negatively and indirectly affects the retention of students of color through stress (Johnson, Wasserman, Yildirim, & Yonai, 2014). Nora (2003) proposes students' perceptions of diversity and their views on tolerance versus acceptance as two possibilities to operationalize campus climate. The DLE incorporates a more comprehensive examination of campus climate by including psychological, behavioral, and organizational dimensions into assessing campus climate (Hurtado & Guillermo-Wann, 2013).

This study tested five DLE measures aligned with the three dimensions of campus climate: *Conversations Across Differences*, *Discrimination and Bias*, *Harassment, Institutional Commitment to Diversity, Negative Cross-Racial Interaction, and Positive Cross-Racial*

Interaction (Hurtado & Guillermo-Wann, 2013). HERI-scored factors with discrimination and bias measuring the "frequency of students' experiences with more subtle forms of discrimination" (Hurtado & Guillermo-Wann, 2013, p. 14) include the frequency in which students personally witnessed discriminating verbal, written comments, exclusion and other types depicted in Appendix B. Harassment measures "the frequency that students experience threats and harassment" (Hurtado & Guillermo-Wann, 2013, p. 14) and includes the frequency with which students experienced physical threats or actual physical assaults or injuries, damage to personal property, and sexual assault. Other definitions and items comprising each factor are included in Appendix B.

Other variables included in this category included frequency that students sought academic advising or attended a professor's office hours, and the frequency students were unable to take a desired course because it was unavailable.

Cognitive and non-cognitive outcomes. For this category, Nora's (2003) model includes academic performance, academic and intellectual development, and noncognitive gains. Tracey and Sedlacek (1987) determined noncognitive gains to be significant predictors of graduation, more so for Black students than White students. In particular, a subscale relating to academic self-concept were among significant subscales for both groups of students. Nora and Cabrera (1996) determined that academic and intellectual development (operationalized as student satisfaction with their intellectual development and academic experience and intellectual growth) exerts indirect effects on persistence for minority students and both direct and indirect effects on persistence for nonminority students. Finally, a student's college GPA has a well-established link to their reenrollment and persistence in college (Bean & Metzner, 1985; Cabrera, Nora & Castañeda, 1992; Nora & Cabrera, 1996; Nora et al., 1996).

For this study, the HERI-scored factor of Academic Self-Concept represents students' confidence in their academic abilities. The composite items for this factor include students' self-rated academic ability, mathematical ability, self-confidence, and drive to achieve. Another cognitive outcome involves fundamental habits a person develops to learn and think, solve problems and react emotionally to different types of situations – all skills practiced by individuals committed to lifelong learning (Matthews & Keating, 1995). Conley (2005) identifies some of these habits as inquisitive nature, critical thinking, and willingness to accept critical feedback, and desire to cope with frustrating and ambiguous learning tasks. The Association of American Colleges and Universities (2007) emphasizes that institutions can develop students' capacity to interact in a complex world by "fostering habits of mind that enable students to continue learning, engage new questions, and reach informed judgments" (p. 31), and HERI's Habits of Mind for Lifelong Learning factor taps into this broader concept. Representative items in the factor include the frequency with which students ask questions in class or analyze information from multiple sources before arriving at a conclusion (Conley, 2005; DeAngelo & Hurtado, 2009).

Goal determination & institutional allegiance. For this study, I operationalized the educational goal component of Nora's (2003) model as the highest degree or credential students aspire to complete. Students' first-year degree aspirations influence enrollment decisions at four-year colleges and universities (Ishitani & DesJardens, 2002; Titus, 2004). Specifically, educational aspirations lower than a bachelor's degree significantly relates to higher rates of dropping out in the first year of college (Ishitani & DesJardens, 2002); by contrast, espousing more advanced educational goals increases the odds of persisting through the third year of college (Titus, 2004).

In addition to educational goals, students' ability to connect to the campus environment significantly and positively predict whether they decide to continue matriculating toward degree completion, which is why HERI's Sense of Belonging factor also appears in the hypothesized structural model. The sense of belonging factor includes statements which students rate their level of agreement: "I feel that I am member of this college," "I see myself as a part of the campus community," and, "I feel a sense of belonging to my campus" (Hurtado & Guillermo-Wann, 2013, p. 67). According to Hurtado et al. (2015), the validating actions originating with staff and faculty inside and outside the classroom can offset any detrimental effects associated with a negative campus climate on students' sense of belonging.

Analytic procedure using full structural equation model. Inspired by Nora's (2003) model of student engagement, Figure 3.3 provides an illustration of the hypothesized relationships among proposed variables for the structural equation model. After finalizing the measurement model for the latent validation constructs, I built the structural model by creating the corresponding paths among the study's selected variables, and the structure shown in Figure 3.3 represents the baseline I used for comparisons when making modifications aimed at improving the overall fit of the structural model. In this analysis, DLE-scored factors were treated as observed variables rather than latent variables, as using CFA to confirm the structure and measurement model of each factor for this sample of students goes beyond the purpose of this study. Additionally, convergence is unlikely in a structural model with so many latent measures.

Hypotheses. Building the literature described in the previous section justifying the inclusion of each variable in the study, the following hypothesized relationships informed the development of each subsequent structural equation model within this study:

1. I expected higher rates of validation to predict a greater sense of belonging, academic self-concept, grade point average, and intent to persist for each groups of students.

2. Outside influences and commitments were anticipated to correspond with a reduced sense of validation and sense of belonging, lower grade point averages, and weaker intentions to persist for each group of students.

3. I hypothesized that students who expressed more positive perceptions of the campus racial climate would perceive more frequent validating signals from faculty and staff, feel a stronger sense of belonging to the institution and have a greater likelihood of intending to persist.

4. Finally, I anticipated that students who had greater confidence in their academic ability would intend to persist at higher rates than their less confident peers for both student veteran and non-veteran samples.

Consideration for nonstandard models. The hypothesized structural model treated factors and certain measured variables as having the same status in the model in an effort to more closely mirror Nora's (2003) model. For example, each demographic or background variable corresponds to an individual survey item whereas latent constructs represent all of the campus climate measures. According to Bentler (2006), such a structure corresponds to a nonstandard or non-factor analytic simultaneous equation model (FASEM), and *EQS 6* has particular flexibility in configuring and testing these types of models. Bentler (2006) considers the use of nonstandard models as indicative of how "conceptual thinking should drive the design of a model" (p. 46).

Consideration for categorical variables. Several categorical variables in this study required special consideration during model specification and analysis (Bentler, 2006; P. Bentler, personal communications, January 22, 2018; Savalei, 2014). Several measures in the model are dichotomous, including the main outcome variable of interest, *intent to persist* (0=not return to

their current institution in fall term, 1=enroll in current institution in fall term) as well as *sex* (1=male, 2=female), *children* (0=no, 1=yes); *institutional control* (0=private, 1=public); *enrollment status* (0=part-time, 1=full-time), *veteran* (0=non-veteran; 1=veteran) and *race* (0=White, 1=student of color). To analyze a model with dichotomous variables, I specified which variables are categorical prompting EQS to perform correlation structure analysis instead of the default covariance matrix analysis (Bentler, 2006). These two choices prompt EQS to use the computation of polyserial and polychoric correlations as the basis for the structural model (Bentler, 2006; P. Bentler, personal communications, January 22, 2018). Next, I created dummy factors to represent any independent measured variables such as sex or race by specifying an equation such as F3=V3 (representing sex) in the model. Lastly, categorical variables required that the correlation matrix be analyzed using Least Squares methods with robust corrections because other analytical methods such as Maximum Likelihood were unlikely to converge in complex models with categorical variables (P. Bentler, personal communications, January 26, 2018; Savalei, 2014).

Convergence and analyzing portions of the model. I began the analysis by closely adhering to Nora's (2003). However, issues with convergence required me, at the recommendation of Bentler (2006; personal communications, January 26, 2018) to separate the model into parts and combine once convergence and good fit was achieved for each separate part. While this method allowed me to develop and analyze a very complex model, several variables had to be omitted to ensure convergence and fit could be achieved. These modifications are further discussed in the next chapter along with their implication with respect to Nora's (2003) conceptual model.

After building the hypothesized model, I used the S-B χ^2 goodness-of-fit statistic and other fit indices (e.g., CFI, TLI, RMSEA) to evaluate the appropriateness and strength of the structural model. LaGrange Multiplier tests, Wald tests, validation theory, this study's underlying conceptual model, and previous research collectively guided my decisions regarding modifications to the hypothesized model with the aim of arriving at an appropriately specified, well-fitted model for the entire sample of student veterans and non-veteran students (Bentler, 2006; Byrne, 2006).

Disaggregation by veteran status. After arriving at a final structural model that adequately represented the data, I disaggregated the data by veteran status. I then applied the structural model I built using the full sample of matched pairs of veterans and non-veterans to the disaggregated samples to determine the student veterans and nontraditional students without prior or current military significantly differ with respect to the perceptions and experiences shaping their persistence decisions. This approach also provided an opportunity to address the fourth research question by examining whether validation differentially explains persistence intentions among student veterans compared to nontraditional non-veteran students. I followed a similar approach as outlined above in modifying the veteran and non-veteran models to achieve acceptable fit for each sample. Finally, I compared the final models for each sample to identify differences in the structural elements of each model as well as differences in the strength of pathways between the two samples.

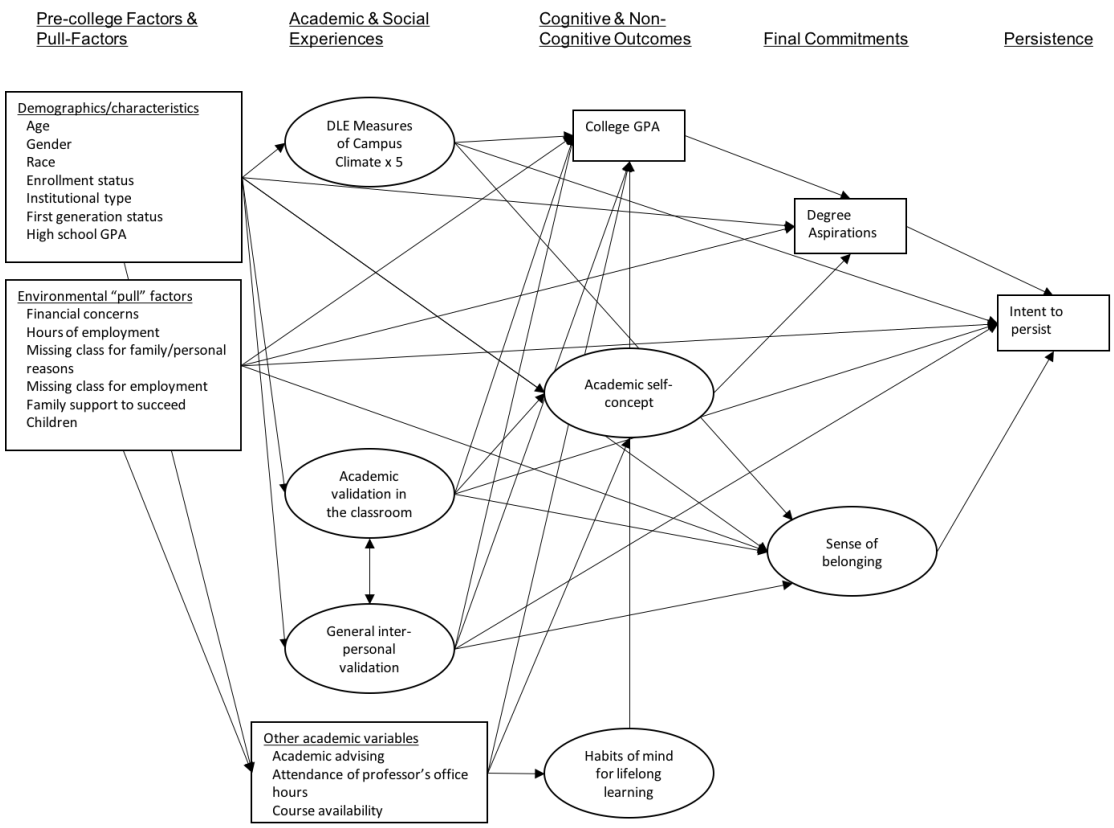

Figure 3.3. The hypothesized structural equation model depicting causal relationships between variables, including intent to persist, is represented in this figure. Circles represent unobserved latent variables or factors and rectangles represent observed variables.

Moderating effects of race/ethnicity and gender. I further disaggregated samples of veteran and non-veteran students by creating a sample of student veterans of color and non-veteran students of color with "color" representing all race/ethnicity categories except White students. I also created separated samples of student veteran women and non-veteran women students, but convergence issues and model fit required me to analyze both groups combined in a single model while controlling for veteran status. While my goal was to disaggregate further, sample sizes of each sub-group, together with the complexity of a reduced, yet meaningful, model, prohibited further disaggregation.

Limitations

This study has several limitations. First, this study relies on secondary data collected through an established survey instrument. Because I used secondary data analysis, I had no control over item content or response options. An instrument developed specifically for student veterans would have allowed me to develop more appropriate questions and response options which, in turn, may decrease possible variation in students' interpretations of survey items and response options. For example, only the third wave of data included information pertaining to other identities and experiences of student veterans, including service in combat operations, their branch of service, or their length of service; however, this small sample size of student veterans within the 2017 dataset places limits on generalizability. Given these challenges, this study combined three waves of data to provide a much richer sample and one that is substantially larger than previous studies examining relationships among student veteran background characteristics, experiences in college, and outcomes. However, even larger sample sizes of student veterans enrolled at a more representative set of two- and four-year institutions would further enhance the credibility and generalizability of this study's findings.

While this study attempts to develop and test latent measures of validation that appropriately and accurately reflect the perceptions and experiences of student veterans, conducting the same set of extensive tests for other latent measures included in the model falls beyond the scope and purpose of my intended focus for this research. This study emphasizes the role of validation in student veterans' persistence decisions and testing the applicability of other factor structures to student veterans, while important for the body of research focusing on student veterans, will undermine the critical emphasis on the concept of validation. Future research may

consider testing these existing factor structures on samples of student veterans and, if necessary, developing new factors that best represent the experiences and perceptions of student veterans.

CHAPTER 4: RESULTS

This study sought to understand student veterans' persistence intentions and how it might differ from other nontraditional students. This insight might lead to the development of programs or workshops to assist administrators, staff, and faculty with engaging student veterans and helping them obtain their degrees. This chapter provides the detailed results of descriptive analyses, confirmatory factor analysis, and structural equation modeling aimed at answering the study's four research questions and estimating the extent to which student veterans' sense of validation correlates with their intent to persist in college. First, cross tabulations contrast student veterans with students without military background. Second, the factorial structure and parameter estimates of validation measures for student veterans and their non-veteran counterparts are presented. Finally, structural equation models predicting intent to persist for each group are depicted including direct, indirect, and total effects of each variable of interest.

After combining data for part-time and full-time students at four-year institutions from the 2015, 2016, and 2017 DLE survey instruments, I removed students missing responses to background characteristics (sex, age, race/ethnicity, high school GPA, and children) in order to match student veterans with a non-veteran student. I used expectation-maximization (EM) procedures to impute missing data (Cox, McIntosh, Reason, & Terenzini, 2014; Little & Rubin, 2002). With a statistically significant Little's χ^2 statistic ($p<.05$), missing data could not be categorized as missing completely at random (MCAR), but missingness patterns did not indicate that data was not missing at random. At this point, the data set included 23,384 non-veteran students and 539 student veterans.

Propensity score matching (PSM) using a tolerance of ±0.05 yielded matched 539 student veterans with 531 non-veteran students using sex, age, race/ethnicity, high school GPA, and

children. Table 4.1 displays the distributions of several key variables for student veterans and their pre- and post-matched non-veteran counterparts. Prior to matching, χ^2 tests indicated that both groups were statistically significantly different ($p<.001$) in terms of previously mentioned matching variables, enrollment status, and institutional control. While matching methods did not yield perfect one-to-one matches, the sample was much more similar with respect to distributions of these demographic characteristics and pre-college experiences. In fact, χ^2 tests indicate that both groups were not statistically significantly different ($p>.05$) with the exception of sex. Although the disparity of each sample by gender remains wide, it was reduced by nearly 30 percentage points with males making up 71.8% of the student veteran sample compared to 59.1% of the non-veteran student sample.

Research Question 1 – Demographic and Pre-College Experiences

Using cross-tabulations accompanied by χ^2 tests, the first research question compared the demographic characteristics and pre-college experiences of bachelor's degree-seeking student veterans with their peers who have not served in the military. Results indicate that men have a significantly stronger representation among the student veteran sample than among non-veteran students even after matching was completed. With women only making up less than 20% of the military population (DoD, 2014), this sample features an overrepresentation of women veterans at four-year institutions relative to the broader military-connected population and possibly indicates that women veterans enroll in higher education at a higher rate than their male counterparts. Alternatively, it may simply represent women's increased likelihood of participating in student surveys. Student veterans also tended to have increased family responsibilities relative to their non-veteran counterparts, with a higher proportion of student veterans having children (41.4%) compared to their unmatched, non-veteran counterparts (5.8%).

With the exception of Asian respondents, student veterans tended to be more diverse than their non-veteran counterparts. Over a tenth (10.8%) of student veterans reported being Black and 16.7% reported being Hispanic compared to just 6.8% Black and 15.5% Hispanic for non-veteran students.

In terms of high school grades, a higher proportion of student veterans reported earning B's (51.5%) and C's (15.9%) in high school than their unmatched, non-veteran counterparts who were mostly A (61.7%) and B (36.1%) students. The vast majority of unmatched, non-veteran students were younger than 25 years of age (89.6%), while more than two-thirds (70.5%) of student veterans are at least 25 years old. In addition, a third (33%) of student veterans are the first in their families to attend college compared to a fifth (19.3%) of non-veteran students.

Table 4.1

Demographic and Background Characteristics Before and After Matching for Student Veterans and Non-Veteran Students as Percentage of Each Sample

Characteristic	Student Veterans	Non-Veteran Students	
	(n=539)	Before Matching (n=23,923)	After Matching (n=531)
Sex: male	71.8	30.3	59.1
Children: yes	41.4	5.8	*36.2*
Age: Over 25 years of age	70.5	10.4	*66.3*
High school GPA			
A	30.0	61.7	*35.2*
B	51.5	36.1	*48.0*
C	15.9	2.0	*13.4*
D	2.6	0.3	*3.4*
Race/Ethnicity			
American Indian	0.7	0.2	*0.2*
Asian	10.8	14.9	*10.9*
Black	10.8	6.8	*9.8*
Hawaiian	0.0	0.1	*0.2*
Hispanic - any race	16.7	15.5	*13.6*

White	48.4	51.0	*49.7*
Two or more races	11.7	10.7	*12.8*
First generation: Yes	33.0	19.3	0.2
Enrollment status: full-time	87.2	95.1	80.8
Institutional control: public	72.0	60.5	61.8

Note. Student veterans were matched with non-veteran students using propensity score matching on the following characteristics: sex, age, gender, high school GPA and race group. Samples include part-time and full-time students at four-year colleges and universities and who had complete cases for matching variables; italicized values indicate statistically non-significant (p>.05) differences between student veterans and their non-veteran counterparts.

Subgroup Differences. Tables 4.2 through 4.7 depict subgroups differences between student veterans and their non-veteran counterparts. This study's student veteran sample includes 152 women (28.2%), 58 Black students (10.8%), 58 Asian students (10.8%), 90 Hispanic students (16.7%), and 261White students (48.4%). When aggregating non-White race groups, the sample includes 278 student veterans of color (51.6%). Each subgroup of student veterans is statistically significantly different (p<.05) from their unmatched, non-veteran student counterparts with a few exceptions.

First, Black and Hispanic student veterans and their unmatched, non-veteran counterparts are not statistically significantly different (p>.05) in terms of first generation status, as over a fifth of Black students and about half of Hispanic students having reported that they were the first in their families to attend college. Second, Black and Asian student veterans attended college full-time at about the same rate as their unmatched, non-veteran counterparts. Finally, Asian and Hispanic student veterans each attended public institutions at about the same rate (p>.05) as their unmatched, non-veteran counterparts.

After matching, differences remained between student veteran and non-veteran student sub-groups. For example, student veteran women differed from their matched counterparts on children (44.7% vs. 28.1% have children), age (65.1% vs. 39.2% are 25 years of age or older),

and high school GPA. Additionally, in line with the aggregated group of students, a higher proportion of Hispanic and White student veterans reported being male than their non-veteran, matched counterparts.

Table 4.2

Demographic and Background Characteristics Before and After Matching for Women Student Veterans and Non-Veteran Students as a Percentage of Each Sample

Characteristic	Women Student Veterans (n=152)	Women Non-Veteran Students Before Matching (n=16,310)	Women Non-Veteran Students After Matching (n=217)
Children: yes	44.7	6.2	28.1
Age: Over 25 years of age	65.1	10.1	39.2
High school GPA			
A	37.1	63.6	47.9
B	49.0	34.6	44.2
C	13.9	1.6	6.0
D	0.0	0.2	1.8
Race/Ethnicity			
American Indian	0.0	0.2	*0.5*
Asian	11.2	13.9	*9.2*
Black	19.7	7.2	*12.9*
Hawaiian	0.0	0.1	*0.0*
Hispanic - any race	17.8	16.0	*16.6*
White	35.5	50.9	*45.2*
Two or more races	14.5	11.0	*12.4*
First generation: Yes	30.6	19.6	0.0
Enrollment status: full-time	80.9	94.9	*82.5*
Institutional control: public	71.1	60.0	49.8

Note. Student veterans were matched with non-veteran students using propensity score matching on the following characteristics: sex, age, gender, high school GPA and race group. Samples include part-time and full-time students at four-year colleges and universities and who had complete cases for matching variables; italicized values indicate statistically non-significant ($p>.05$) differences between student veterans and their non-veteran counterparts.

Table 4.3

Demographic and Background Characteristics Before and After Matching for Student Veterans and Non-Veteran Students of Color as a Percentage of Each Sample

Characteristic	Student Veterans of Color (n=278)	Non-Veteran Students of Color	
		Before Matching (n=11,449)	After Matching (n=267)
Sex: Male	64.7	30.1	55.4
Children: yes	45.0	6.7	34.5
Age: Over 25 years of age	66.5	11.3	*61.0*
High school GPA			
A	31.5	55.9	*34.1*
B	52.5	41.5	*49.8*
C	23.8	2.4	*13.5*
D	2.2	0.3	*2.6*
Race/Ethnicity			
American Indian	1.4	0.4	*0.4*
Asian	20.9	30.4	*21.7*
Black	20.9	13.9	*19.5*
Hawaiian	0.0	0.2	*0.4*
Hispanic - any race	32.4	31.6	*27.0*
Two or more races	22.7	21.9	*25.5*
First generation: Yes	38.2	28.6	0.5
Enrollment status: full-time	87.1	95.5	*83.1*
Institutional control: public	69.4	*64.7*	54.3

Note. Student veterans were matched with non-veteran students using propensity score matching on the following characteristics: sex, age, gender, high school GPA and race group. Samples include part-time and full-time students at four-year colleges and universities and who had complete cases for matching variables; italicized values indicate statistically non-significant ($p>.05$) differences between student veterans and their non-veteran counterparts.

Table 4.4

Demographic and Background Characteristics Before and After Matching for Black Student Veterans and Non-Veteran Students as a Percentage of Each Sample

Characteristic	Black Student Veterans (n=58)	Black Non-Veteran Students	
		Before Matching (n=1,597)	After Matching (n=52)
Sex: male	48.3	26.4	*46.2*
Children: yes	58.6	13.7	*44.2*
Age: Over 25 years of age	58.6	17.8	*63.5*
High school GPA			
A	27.6	48.1	*23.1*
B	62.1	48.5	*63.5*
C	8.6	3.3	*11.5*
D	1.7	0.1	*1.9*
First generation: Yes	28.1	*21.0*	0.0
Enrollment status: full-time	87.9	*93.1*	*78.8*
Institutional control: public	74.1	59.4	68.3

Note. Student veterans were matched with non-veteran students using propensity score matching on the following characteristics: sex, age, gender, high school GPA and race group. Samples include part-time and full-time students at four-year colleges and universities and who had complete cases for matching variables; italicized values indicate statistically non-significant ($p>.05$) differences between student veterans and their non-veteran counterparts.

Table 4.5

Demographic and Background Characteristics Before and After Matching for Asian Student Veterans and Non-Veteran Students as a Percentage of Each Sample

Characteristic	Asian Student Veterans (n=58)	Asian Non-Veteran Students	
		Before Matching (n=3,483)	After Matching (n=58)
Sex: male	70.7	35.1	*65.5*
Children: yes	20.7	2.6	*25.9*
Age: Over 25 years of age	46.6	7.0	*55.2*
High school GPA			
A	50.0	69.2	*53.4*
B	41.4	29.7	*39.7*
C	8.6	1.0	*6.9*
D	0.0	0.1	*0.0*
First generation: Yes	42.6	21.7	*0.0*
Enrollment status: full-time	94.8	*97.6*	*89.7*
Institutional control: public	70.7	*71.3*	*58.6*

Note. Student veterans were matched with non-veteran students using propensity score matching on the following characteristics: sex, age, gender, high school GPA and race group. Samples include part-time and full-time students at four-year colleges and universities and who had complete cases for matching variables; italicized values indicate statistically non-significant ($p>.05$) differences between student veterans and their non-veteran counterparts.

Table 4.6

Demographic and Background Characteristics Before and After Matching for Hispanic Student Veterans and Non-Veteran Students as a Percentage of Each Sample

Characteristic	Hispanic Student Veterans (n=90)	Hispanic Non-Veteran Students	
		Before Matching (n=3,623)	After Matching (n=72)
Sex: male	70.0	27.9	50.0
Children: yes	43.3	8.2	*36.1*
Age: Over 25 years of age	80.0	12.9	*66.7*
High school GPA			
A	22.7	45.7	*25.0*
B	59.1	50.8	*52.8*
C	14.8	3.2	*19.4*
D	3.4	0.3	*2.8*
First generation: Yes	48.3	*50.3*	0.0
Enrollment status: full-time	83.3	94.4	*81.9*
Institutional control: public	64.4	*63.7*	*51.4*

Note. Student veterans were matched with non-veteran students using propensity score matching on the following characteristics: sex, age, gender, high school GPA and race group. Samples include part-time and full-time students at four-year colleges and universities and who had complete cases for matching variables; italicized values indicate statistically non-significant ($p>.05$) differences between student veterans and their non-veteran counterparts.

Table 4.7

Demographic and Background Characteristics Before and After Matching for White Student Veterans and Non-Veteran Students as a Percentage of Each Sample

Characteristic	White Student Veterans (n=261)	White Non-Veteran Students Before Matching (n=11,935)	White Non-Veteran Students After Matching (n=264)
Sex: male	79.3	30.4	62.9
Children: yes	37.5	4.9	*37.9*
Age: Over 25 years of age	74.7	9.5	*71.6*
High school GPA			
A	28.5	67.2	*36.4*
B	50.4	30.9	*46.2*
C	18.1	1.6	*13.3*
D	3.1	0.3	*4.2*
First generation: Yes	27.6	10.4	0.0
Enrollment status: full-time	87.4	94.7	78.4
Institutional control: public	74.7	56.4	*69.3*

Note. Student veterans were matched with non-veteran students using propensity score matching on the following characteristics: sex, age, gender, high school GPA and race group. Samples include part-time and full-time students at four-year colleges and universities and who had complete cases for matching variables; italicized values indicate statistically non-significant (p>.05) differences between student veterans and their non-veteran counterparts.

The main outcome of interest for this study is intent to persist. Table 4.8 provides the breakdown, by race/ethnicity, gender, and veteran status of the proportion of students who intend to return in the fall to their college or university. A lower proportion of student veterans (89.6%) reported an intention to return to their college or university the following academic year than their unmatched (93.3%) and matched (91.9%) counterparts. Across sub-groups, including women, students of color, Black students, Asian students, Hispanic students, and White students, smaller proportions of student veterans intended to return to their college in comparison to their unmatched non-military counterparts. With the exception of Black students, the same was true

when comparing student veterans to their matched, non-veteran peers. These descriptive statistics indicate a small but consistent gap in persistence intentions between student veterans and their non-veteran peers, and subsequent analyses sought to explain this gap.

Table 4.8

Student Intentions to Persist by Sex and Race Group by Veteran Status as Percentage of Each Sample

	Student Veterans	Non-Veteran Students	
Race Group		Before Matching (n=23,923)	After Matching (n=531)
All	89.6	93.3	*91.9*
Women	91.4	93.6	*92.6*
Students of Color	87.8	93.1	*92.1*
Black	89.7	92.9	*84.6*
Asian	84.5	92.2	*91.4*
Hispanic	92.2	94.5	*95.8*
White	91.6	93.5	*91.7*

Note. Italicized values indicate statistically non-significant (p>.05) differences (no difference) between student veterans and their non-veteran counterparts.

Research Question 2 – Measures of Validation

The second research question sought to determine the extent to which the structural properties of established latent measures of validation for a general population of college students also hold for student veterans. My hypothesized model, depicted in Figure 3.1 and based on validation measures developed by Hurtado, Cuellar, and Guillermo-Wann (2011), served as the starting point for analyses. Results from the development of a baseline model for student veterans are shown in Figure 4.1, and the model for matched, non-veteran students is shown in Figure 4.2. Additionally, unstandardized and standardized parameter estimates for the baseline models for each sample are presented in Table 4.9.

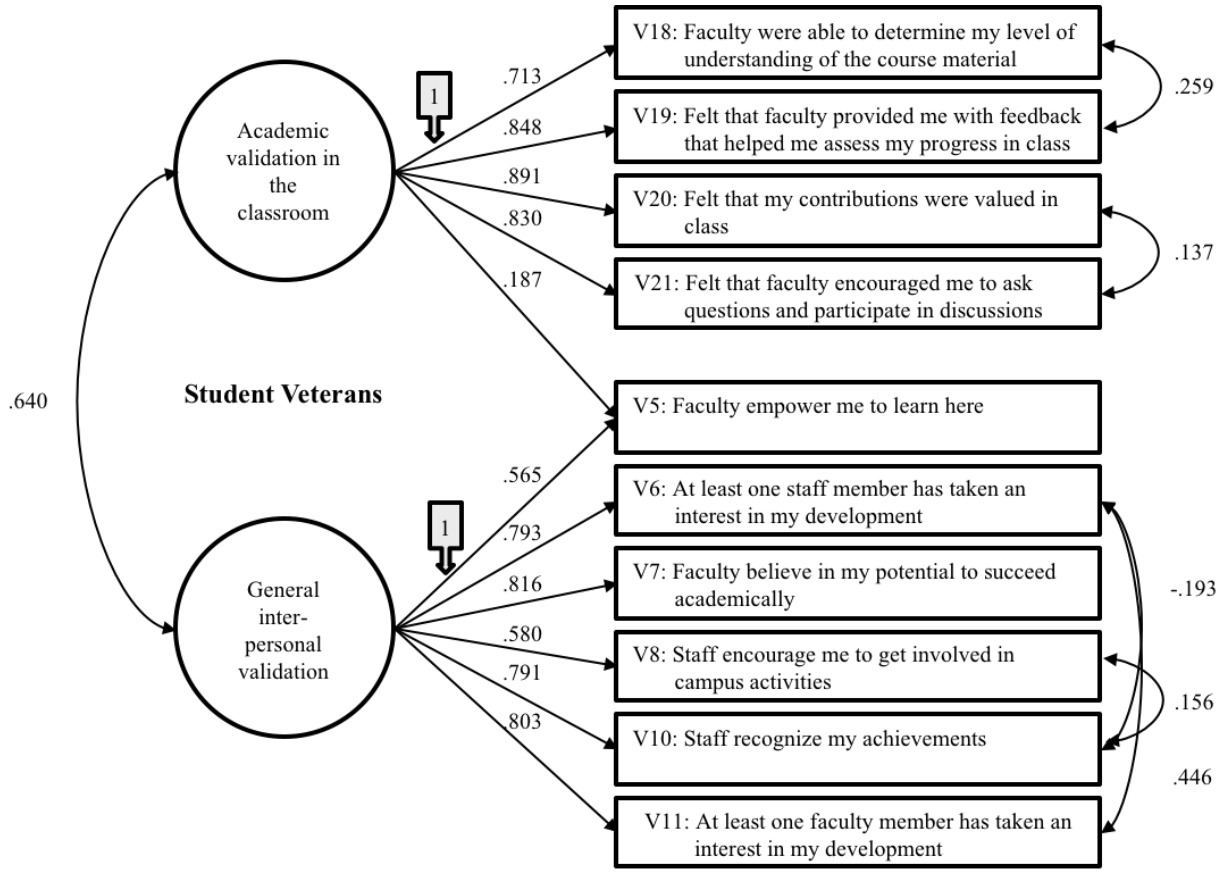

Figure 4.1. Two-factor validation measure with standardized estimates for student veterans. Circles represent the two unobserved latent variables or factors, academic validation in the classroom and general interpersonal personal validation, and rectangles represent observed or measured variables. Unidirectional arrow show that latent factors generate observed or measurable variables. Bidirectional arrows indicate correlations between factors and correlations between error terms.

Student veterans. Fitting the hypothesized model presented in Chapter 3 to the student veteran sample yielded a poor-fitting model (Satorra-Bentler [S-B] χ^2 =149.04; df=34, p<.05, CFI=.952; TFI=.936, RMSEA=.079). Subsequently, I added a factor cross loading between the academic validation factor and the faculty empowerment item and four error covariances based on examination of Lagrange Multiplier (LM) tests. The addition of these five paths improved model fit significantly, and the final model proved to be a good fitting model (S-B χ^2 =36.208; df=28; p>.05; CFI=.997; TFI=.994; RMSEA=.023). The addition of the factor cross-loading between the academic validation factor and the faculty empower item is a similar relationship

determined by Hurtado et al. (2011) for validation measures for students of color. However, their model for White students did not have this relationship – a relationship that makes sense for this study considering more than half of the student veteran sample (51.6%) are students of color.

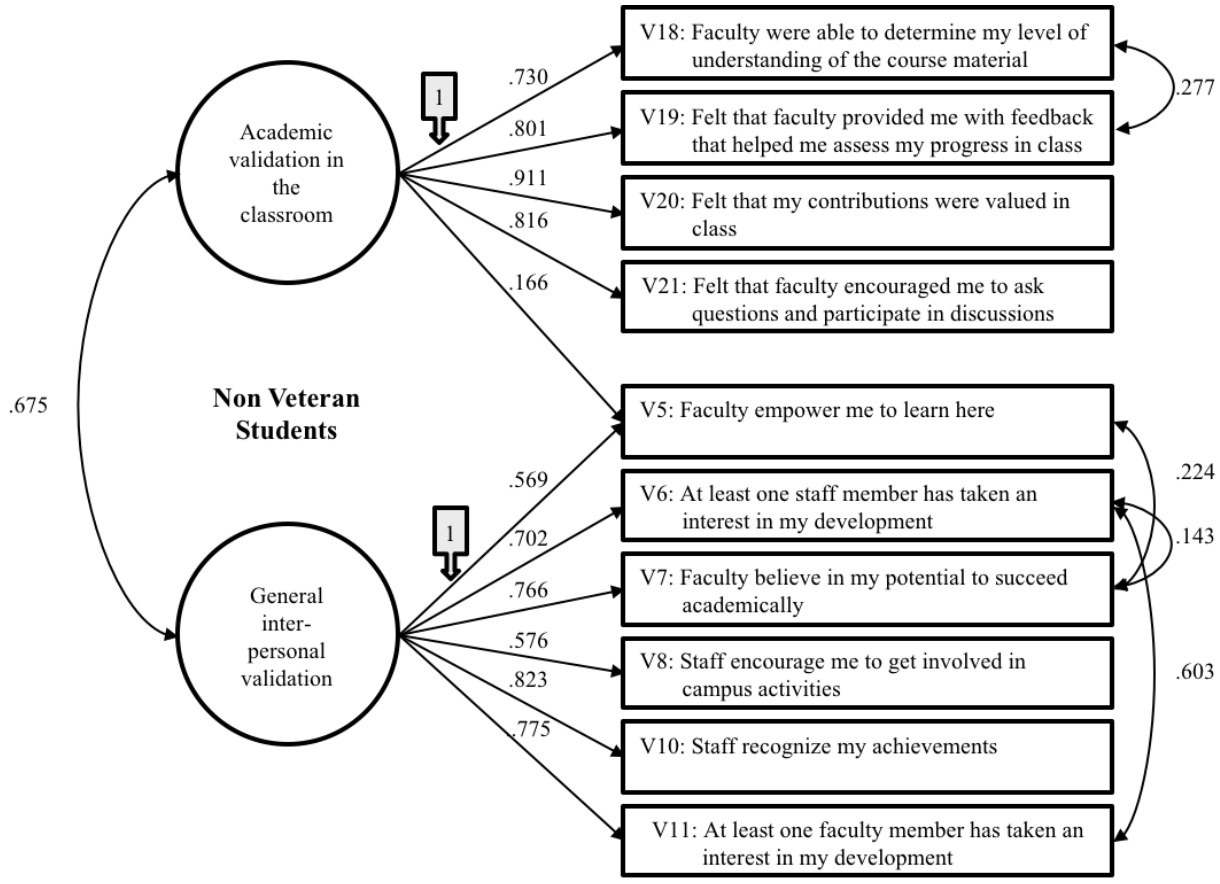

Figure 4.2. Two-factor validation measure with standardized estimates for non-veteran, non-tradition students. Circles represent the two unobserved latent variables or factors, academic validation in the classroom and general interpersonal personal validation, and rectangles represent observed or measured variables. Unidirectional arrow show that latent factors generate observed or measurable variables. Bidirectional arrows indicate correlations between factors and correlations between error terms.

Non-veteran, nontraditional students. The model fitting process for non-veteran students was similar to that of student veterans. First, I started with the hypothesized model depicted in Figure 3.1. This yielded, once again, a poor fitting model (S-B $\chi 2$ =175.894; df=33, p<.05, CFI=.934; TFI=.910, RMSEA=.090). Following the same procedure and examining LM

tests, along with considering theoretical underpinnings, I added the same cross-loading as the student veteran model between the academic validation factor and the faculty empowerment item, and an additional four error covariances. This yielded a model that fits the data well for non-veteran, nontraditional students (S-B $\chi 2$ =37.150; df=29, p>.05, CFI=.996; TFI=.994, RMSEA=.023). Students of color make up just over half of this non-veteran sample and validation measures operate similarly to Hurtado et al.'s (2011) measures for their sample of students of color.

Table 4.9

Unstandardized and Standardized Parameter Estimates in Baseline Models for Student Veterans and Non-Veteran Students

Latent factor/Items and variable label	Student Veterans			Non-Veteran Students		
	b	β	Error Variance	b	β	Error Variance
Academic validation in the classroom[a]						
Faculty were able to determine my level of understanding of the course material	1.000	.713	.701	1.000	.730	.683
Felt that faculty provided me with feedback that helped me assess my progress in class	1.211	.848	.529	1.097	.801	.598
Felt that my contributions were valued in class	1.264	.891	.453	1.269	.911	.413
Felt that faculty encouraged me to ask questions and participate in discussions	1.133	.830	.558	1.101	.816	.578
Faculty empower me to learn here[b]	.170	.187	.714	.150	.166	.722
General interpersonal validation[b]						
Faculty empower me to learn here	1.000	.565	.714	1.000	.569	.722
At least one staff member has taken an interest in my development	1.708	.793	.609	1.500	.702	.713
Faculty believe in my potential to succeed academically	1.469	.816	.578	1.353	.766	.643
Staff encourage me to get involved in campus activities	1.277	.580	.815	1.333	.576	.817
Staff recognize my achievements	1.588	.791	.612	1.659	.823	.568
At least one faculty member has taken an interest in my development	1.660	.803	.596	1.594	.775	.632

[a]Five-point scale: From very often = 5 to never =1

[b]Four-point scale: From strongly agree=4 to strongly disagree =1

With the exception of two items no longer on the DLE survey instrument, the fitted baseline models for student veterans and their non-veteran counterparts operate similarly, in terms of structure, to each other and to those developed by Hurtado et al. (2011) for students of color. Moreover, they extend quantitative measures of Rendón's (1994) theory of validation to student veteran and nontraditional students. Both staff and faculty can make these students feel more validated by actively engaging in a manner consistent with the survey items from these measures. Five items correspond to academic validation in the classroom with students' contributions being valued (β=.89 for student veterans and β=.91 for non-veteran students) as the most salient indicator for both groups. For general interpersonal validation, six items were statistically significant with belief in a student's potential to succeed academically (β=.82) being the most salient for student veterans and staff recognizing achievement (β=.82) being the most important for non-veteran students. Additionally, there is a large correlation between academic validation in the classroom and general interpersonal validation for both groups (β=.64 for student veterans; β=.68 for non-veteran students). Although the relationship between factors and their respective indicators operate similarly in terms of structure for both groups, a closer examination is required to fully understand how similar validation measures are for each group.

Testing invariance of measurement models between groups. Once I developed baseline models for each group, I conducted invariance testing to determine if common factor loadings and covariances were equal across both groups. This first part required development of a multi-group representation of the baseline model, or configural model. The configural model allows analyses to be conducted on both groups simultaneously and provides a baseline value to compare future models (Byrne, 2006). In the configural model, no equality constraints were

imposed and yielded a well-fitted model (S-B $\chi 2$ =73.3683; df=57, p>.05, CFI=.996; TFI=.994, RMSEA=.023) with no modifications required.

After developing and testing a well-fitted configural model, I tested for measurement invariance by imposing equality constraints on all freely estimated common factor loadings and error covariances. This model, with equality constraints, yielded good fit (S-B $\chi 2$ =84.2297; df=68, p>.05, CFI=.996; TFI=.995, RMSEA=.021) and LM tests indicate that none of the common factor loadings or error covariances are significantly different (p>.05). Table 4.10 summarizes fit indices and changes between the configural model and the model to test for invariance. Aside from the differences in error covariances identified in the baseline model for each group, tests of invariance confirm that this two-factor structure is equivalent for student veterans and their non-veteran counterparts. To answer the research questions directly, established measures of validation, with the absence of two survey items included in the original Hurtado et al. (2011) analysis, fit both student veterans and their matched, non-veteran, nontraditional counterparts.

Table 4.10

Tests for Invariance of Factorial Structure and Item Measurements Across Groups

Model tested	CFI	NFI	RMSEA	S-B χ^2	df	$\Delta\chi^{2a}$	Δdf
Model 1 (configural)	0.996	0.984	0.022	73.368	57		
Model 2 (measurement)	0.996	0.982	0.021	84.230	68	10.861	11
Invariance of factor loadings, measurement error variances-covariances							

[a]Corrected value

Test for difference in means. To further examine differences in how student veterans and their non-veteran counterparts experience validation, I calculated the mean score for each validation measure using group specific factor loadings determined during confirmatory factor analysis and shown in Table 4.9. Once mean scores were calculated for both groups, I used a non-parametric test – the Wilcoxon-Mann-White test – to determine if there was a statistically significant difference for each group on each validation measure (DePuy, Berger, & Zhou, 2005; Field, 2013). Results indicate that student veterans' reported significantly more frequent academic validation in the classroom than their non-veteran counterparts ($z=-2.33$, $p<.05$). For general interpersonal validation, student veterans also had significantly higher mean scores than non-veteran students ($z=-2.40$. $p<.05$). These results suggest that student veterans experience higher levels of validation than their equally matched, non-veteran counterparts.

Research Question 3 – Student Veteran identify, Validation, and Intent to Persist

The third research question sought to determine the extent to which measures of validation and identification as a veteran explain students' intention to persist, while controlling for other demographic characteristics and college experiences. Initially, I closely adhered to the

hypothesized model depicted in Figure 3.3 to determine the relationship between validation measures and intentions to persist for the full sample of student veterans and non-veteran students with veteran status as a variable within the model. The multi-group model provided a larger sample size to analyze and in which to achieve fit more easily with a complex model. It also gave me the opportunity to examine how veteran status operated within the full model. However, convergence was not possible even when specifying start values estimated from non-converging iterations and loosening convergence criteria (Bentler, 2006). This lack of convergence indicates that this model was problematic due to possible theoretical misspecification; Bentler (2006) suggests that convergence problems may occur when a model is "extremely inadequate at describing the data" (p. 234).

Multi-group model. In order to develop a model that would converge, I followed the advice of Bentler (2006; personal communications, January 26, 2018) by fitting sections of the hypothesized model until I arrived at a theoretically sound model that also had good fit. For example, I modeled the relationship between demographic and background variables with the newly developed validation measures until good fit was achieved. In order to model the relationship between each demographic variable, such as sex or veteran status, to the two-factor validation measures, I added a second-order factor because variables with bi-directional paths between them to signify correlation (such as the two validation factors in the original hypothesized model) cannot also serve as endogenous (predicted) variables in a structural model (Bentler, 2006). I removed the bi-directional path between the two factors and replaced it with the second order factor structure, which now accounts for the association between the two first order factors (Bentler, 2006) while also providing the flexibility of an endogenous variable. This second-order factor is illustrated in Figure 4.3. Robust goodness-of-fit results indicated good fit

for this portion of the model (S-B $\chi 2$ =142.325 df=122, p>.05, CFI=.988 TFI=.986, RMSEA=.021). This second-order factor essentially represents the combined sense of validation perceived by students coming from faculty and staff.

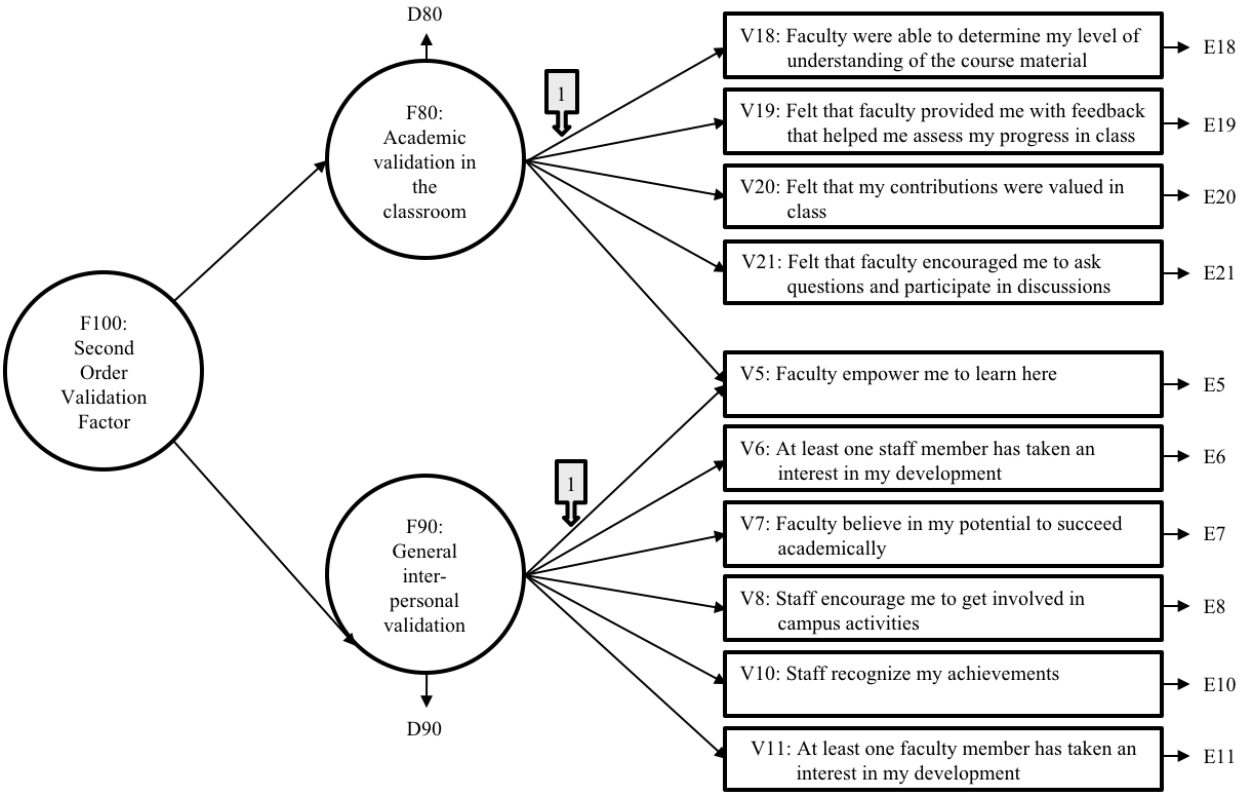

Figure 4.3. Second-order factor analysis model for validation. A second-order factor was added to the two-factor validation measures to allow the measures to become independent variables within a structural equation model. The second-order factor accounts for the correlation between first-order factors, academic validation and general interpersonal validation. Disturbances or residual variance (D80 and D90) are also generated when a factor becomes a dependent variable (Bentler, 2006).

Results from LM and Wald tests coupled with considerations based upon the frameworks and previous research grounding this study guided further model modifications. For example, I added new latent measures to the model to better account for the relationships among a similar set of variables related to students' sense of environmental pull. This environmental pull factor achieved separate good fit (S-B $\chi 2$ =7.0508; df=3, p>.05, CFI=.987 TFI=.956; RMSEA=.036).

However, individual variables became non-significant and the factor degraded when it was added to the full structural model, which led me to exclude several variables from subsequent iterations. This iterative process of modifying the model led to a final well-fitted multi-group model (S-B $\chi 2$ =415.1269; df=391, p>.05, CFI=.961 TFI=.954; RMSEA=.028) while maintaining theoretical consistency. Standardized direct, indirect, and total parameter values are shown in Table 4.11 in the left-hand column for each endogenous variable. Table 4.12 provides a correlation matrix for observed variables, and Table 4.13 shows the error correlations for the multi-group model.

Only two variables had statistically significant (p<.05) direct paths to students' intent to persist despite multiple tests of other hypothesized direct paths predicting persistence intentions. Degree aspirations and external pull factors significantly predicted students' intentions to persist. Students who expressed higher degree aspirations tended to have higher likelihoods of intending to persist while respondents who experienced stronger external pull factors, such as work commitments, tended to be less likely to indicate plans to return for the following fall term.

In addition to these two direct paths, the indirect relationships among several other variables and persistence intentions are particularly noteworthy. First, students who perceived more validation from faculty and staff (second order) also had greater confidence in their academic abilities, and these more confident students aspired to pursue more advanced degrees. As mentioned previously, students with more advanced degree aspiration intended to persist at higher rates than their peers without such plans. As a result of this path, validation seems to have some salience in students' intentions to remain enrolled at their institutions.

Second, women and older students were less likely to intend to persist, but students with higher high school GPAs had stronger likelihoods of planning to re-enroll. Women's reduced

confidence in their academic abilities compared to men translated into somewhat more muted degree aspirations leading to women being slightly less likely to intend to return to their current institution for the following academic year. Older students' reduced expectations for earning advanced degrees compared to their younger counterparts contributed to a significant indirect effect of age on intention to persist. Students with higher grades in high school also earned higher grades in college and had more confidence in their academic abilities. Ultimately, higher high school grades led to a significant, but small, indirect effect on their intent to persist.

Veteran status did not have any significant direct or indirect effect on students' persistence intentions in this model. However, students with a military background did feel less concern about their ability to finance college. While the reason for less financial concern is not clear, many of these students may be taking advantage of educational benefits provided by the GI Bill. Student veterans also had less trouble enrolling in classes they needed than their non-veteran counterparts. The next two sections will provide separate detailed analyses of each group.

Table 4.11

Standardized Total, Direct, and Indirect Effects for Student Veteran and Non-Veteran Student Structural Equation Models

Predictor Variable	Intent to Persist			Academic Validation in the Classroom		
	Full Sample	Student Veterans	Non-Veteran Students	Full Sample	Student Veterans	Non-Veteran Students
Total						
Academic Self-Concept	.154	.600	-.594			
Validation (Second Order Factor)	.065	.265	*-.048*	.775	.790	.771
Academic Validation in the Classroom						
General Interpersonal Validation			.317			
Habits of Mind						
Environmental "Pull" Variables	-.323	-.340	-.147	-.133	*.039*	-.317
Discrimination and Bias			-.110			
Harassment					-.461	
Institutional Diversity			.151	.290	.326	.364
Degree Aspirations	.708					
Age	-.084		*.028*	.103	.238	.130
Sex: Female	-.029					
Children			-.103		-.169	
High School GPA	.026					
Institutional Control				-.180	-.170	-.147
Race: Student of Color				-.129		
Veteran						
Course Availability						
Direct						
Academic Self-Concept		.600	-.594			
Validation (Second Order Factor)				.775	.790	.771
Academic Validation in the Classroom						
General Interpersonal Validation			.317			
Habits of Mind						
Environmental "Pull" Variables	-.323	-.340		-.133	.296	-.317
Discrimination and Bias			-.110			
Harassment					-.461	
Institutional Diversity				.290	.326	.364
Degree Aspirations	.708					
Age				.103		.130
Sex: Female						
Children						
High School GPA						
Institutional Control				-.180	-.170	-.147
Race: Student of Color				-.129		
Veteran						
Course Availability						
Indirect						
Academic Self-Concept	.154					
Validation (Second Order Factor)	.065	.265	*-.048*			
Academic Validation in the Classroom						
General Interpersonal Validation						
Habits of Mind						
Environmental "Pull" Variables			-.147		-.256	
Discrimination and Bias						
Harassment						
Institutional Diversity			.151			
Degree Aspirations						
Age	-.084		.028		.238	
Sex: Female	-.029					
Children			-.103		-.169	
High School GPA	.026					
Institutional Control						
Race: Student of Color						
Veteran						
Course Availability						
R-Square	.605	.475	.387	.787	.900	.858

Note. All coefficients are statistically significant (p<.05) unless italicized. (continued)

Table 4.11 (continued)

Standardized Total, Direct, and Indirect Effects for Student Veteran and Non-Veteran Student Structural Equation Models

	General Interpersonal Validation			Academic Self Concept		
Predictor Variable	Full Sample	Student Veterans	Non-Veteran Students	Full Sample	Student Veterans	Non-Veteran Students
Total						
Academic Self-Concept						
Validation (Second Order Factor)	.597	.528	.577	.424	.442	.389
Academic Validation in the Classroom		.149				
General Interpersonal Validation						
Habits of Mind						
Environmental "Pull" Variables			-.259			
Discrimination and Bias						
Harassment						
Institutional Diversity	.456	.461	.475			
Degree Aspirations						
Age						
Sex: Female				-.190		
Children						.173
High School GPA				.168		
Institutional Control	-.162	-.266				
Race: Student of Color						
Veteran						
Course Availability						
Direct						
Academic Self-Concept						
Validation (Second Order Factor)	.597	.528	.577	.424	.442	.389
Academic Validation in the Classroom						
General Interpersonal Validation						
Habits of Mind						
Environmental "Pull" Variables			-.259			
Discrimination and Bias						
Harassment						
Institutional Diversity	.456	.461	.475			
Degree Aspirations						
Age				-.190		
Sex: Female		.149				
Children						.173
High School GPA				.168		
Institutional Control	-.162	-.266				
Race: Student of Color						
Veteran						
Course Availability						
Indirect						
Academic Self-Concept						
Validation (Second Order Factor)						
Academic Validation in the Classroom						
General Interpersonal Validation						
Habits of Mind						
Environmental "Pull" Variables						
Discrimination and Bias						
Harassment						
Institutional Diversity						
Degree Aspirations						
Age						
Sex: Female						
Children						
High School GPA						
Institutional Control						
Race: Student of Color						
Veteran						
Course Availability						
R-Square	.590	.585	.626	.228	.195	.182

Note. All coefficients are statistically significant (p<.05) unless italicized. (continued)

Table 4.11 (continued)

Standardized Total, Direct, and Indirect Effects for Student Veteran and Non-Veteran Student Structural Equation Models

	Sense of Belonging			College GPA		
Predictor Variable	Full Sample	Student Veterans	Non-Veteran Students	Full Sample	Student Veterans	Non-Veteran Students
Total						
Academic Self-Concept Validation (Second Order Factor)	.385	.411	.352	.186	.151	.123
Academic Validation in the Classroom				.240	.172	.105
General Interpersonal Validation	.644	.777	.610		.030	.072
Habits of Mind				.564		
Environmental "Pull" Variables			-158	-.032	-.066	-.205
Discrimination and Bias Harassment					-.079	
Institutional Diversity	.496	.358	.503	.070	.070	.073
Degree Aspirations						
Age	-.106		-.170	.025	.041	.145
Sex: Female		.116			*.004*	
Children					*-.029*	
High School GPA				.120		.226
Institutional Control	-.104	-.207		-.043	-.037	*-.015*
Race: Student of Color				-.031		
Veteran						
Course Availability					-.232	-.610
Direct						
Academic Self-Concept Validation (Second Order Factor)						
Academic Validation in the Classroom					.172	.105
General Interpersonal Validation	.644	.777	.610			
Habits of Mind				.564		
Environmental "Pull" Variables						
Discrimination and Bias Harassment						
Institutional Diversity	.202		.213			
Degree Aspirations						
Age	-.106		-.170			.131
Sex: Female						
Children						
High School GPA				.120		.226
Institutional Control						
Race: Student of Color						
Veteran						
Course Availability					-.232	-.610
Indirect						
Academic Self-Concept Validation (Second Order Factor)	.385	.411	.352	.186	.151	.123
Academic Validation in the Classroom				.240		
General Interpersonal Validation					.030	.072
Habits of Mind						
Environmental "Pull" Variables			-.158		-.066	-.205
Discrimination and Bias Harassment					-.079	
Institutional Diversity	.294	.358	.290		.070	.073
Degree Aspirations						
Age				.025	.041	*.014*
Sex: Female		.116			*.004*	
Children					*-.029*	
High School GPA						
Institutional Control	-.104	-.207		-.043	-.037	*-.015*
Race: Student of Color				-.031		
Veteran						
Course Availability						
R-Square	.586	.604	.570	.332	.091	.449

Note. All coefficients are statistically significant (p<.05) unless italicized. (continued)

Table 4.11 (continued)

Standardized Total, Direct, and Indirect Effects for Student Veteran and Non-Veteran Student Structural Equation Models

	Habits of Mind			Degree Aspirations		
Predictor Variable	Full Sample	Student Veterans	Non-Veteran Students	Full Sample	Student Veterans	Non-Veteran Students
Total						
Academic Self-Concept				.218	.215	.344
Validation (Second Order Factor)	.330	.567	.559	.092	.095	
Academic Validation in the Classroom	.426					
General Interpersonal Validation						
Habits of Mind						
Environmental "Pull" Variables	-.057					
Discrimination and Bias						
Harassment						
Institutional Diversity	.124					
Degree Aspirations						
Age	.044		.135	-.119	-.123	-.202
Sex: Female				-.041		
Children						.060
High School GPA				.036		
Institutional Control	-.077					
Race: Student of Color	-.055					
Veteran						
Course Availability						
Direct						
Academic Self-Concept				.218	.215	.344
Validation (Second Order Factor)		.567	.559			
Academic Validation in the Classroom	.426					
General Interpersonal Validation						
Habits of Mind						
Environmental "Pull" Variables						
Discrimination and Bias						
Harassment						
Institutional Diversity						
Degree Aspirations						
Age			.135	-.119	-.123	-.202
Sex: Female						
Children						
High School GPA						
Institutional Control						
Race: Student of Color						
Veteran						
Course Availability						
Indirect						
Academic Self-Concept						
Validation (Second Order Factor)	.330			.092	.095	.134
Academic Validation in the Classroom						
General Interpersonal Validation						
Habits of Mind						
Environmental "Pull" Variables						
Discrimination and Bias						
Harassment						
Institutional Diversity	.124					
Degree Aspirations						
Age	.044					
Sex: Female				-.041		
Children						.060
High School GPA				.036		
Institutional Control	-.077					
Race: Student of Color	-.055					
Veteran						
Course Availability						
R-Square	.182	.321	.331	.061	.062	.140

Note. All coefficients are statistically significant (p<.05) unless italicized.

(continued)

Table 4.11 (continued)
Standardized Total, Direct, and Indirect Effects for Student Veteran and Non-Veteran Student Structural Equation Models

Predictor Variable	Discrimination & Bias			Harassment		
	Full Sample	Student Veterans	Non-Veteran Students	Full Sample	Student Veterans	Non-Veteran Students
Total						
Academic Self-Concept						
Validation (Second Order Factor)						
Academic Validation in the Classroom						
General Interpersonal Validation						
Habits of Mind						
Environmental "Pull" Variables	.583	.612	.586	.467	.556	.451
Discrimination and Bias						
Harassment						
Institutional Diversity						
Degree Aspirations						
Age	-.264	-.601	-.258	-.143	-.518	-.133
Sex: Female						
Children		*.365*			.367	
High School GPA						
Institutional Control						
Race: Student of Color	.151					
Veteran						
Course Availability						
Direct						
Academic Self-Concept						
Validation (Second Order Factor)						
Academic Validation in the Classroom						
General Interpersonal Validation						
Habits of Mind						
Environmental "Pull" Variables	.583	.612	.586	.467	.556	.451
Discrimination and Bias						
Harassment						
Institutional Diversity						
Degree Aspirations						
Age	-.264	-.601	-.258	-.143	-.518	-.133
Sex: Female						
Children		*.365*			.367	
High School GPA						
Institutional Control						
Race: Student of Color	.151					
Veteran						
Course Availability						
Indirect						
Academic Self-Concept						
Validation (Second Order Factor)						
Academic Validation in the Classroom						
General Interpersonal Validation						
Habits of Mind						
Environmental "Pull" Variables						
Discrimination and Bias						
Harassment						
Institutional Diversity						
Degree Aspirations						
Age						
Sex: Female						
Children						
High School GPA						
Institutional Control						
Race: Student of Color						
Veteran						
Course Availability						
R-Square	.433	.576	.410	.238	.458	.222

Note. All coefficients are statistically significant (p<.05) unless italicized. (continued)

Table 4.11 (continued)
Standardized Total, Direct, and Indirect Effects for Student Veteran and Non-Veteran Student Structural Equation Models

Predictor Variable	Financial Concerns			Course Availability		
	Full Sample	Student Veterans	Non-Veteran Students	Full Sample	Student Veterans	Non-Veteran Students
Total						
Academic Self-Concept						
Validation (Second Order Factor)			-.064	-.075	-.067	-.068
Academic Validation in the Classroom						
General Interpersonal Validation			-.111	-.126	-.128	-.118
Habits of Mind						
Environmental "Pull" Variables	.138	.165	.175	.234	.315	.282
Discrimination and Bias						
Harassment						
Institutional Diversity			-.053	-.057	-.059	-.056
Degree Aspirations						
Age				-.105		
Sex: Female					*-.019*	
Children						
High School GPA			-.172			
Institutional Control				.020	.034	
Race: Student of Color	.162	.156	.211			
Veteran	-.226			-.140		
Course Availability						
Direct						
Academic Self-Concept						
Validation (Second Order Factor)						
Academic Validation in the Classroom						
General Interpersonal Validation	-.050		-.111	-.126	-.128	-.118
Habits of Mind						
Environmental "Pull" Variables	.138	.165	.147	.234	.315	.251
Discrimination and Bias						
Harassment						
Institutional Diversity						
Degree Aspirations						
Age				-.105		
Sex: Female						
Children						
High School GPA			-.172			
Institutional Control						
Race: Student of Color	.162	.156	.211			
Veteran	-.226			-.140		
Course Availability						
Indirect						
Academic Self-Concept						
Validation (Second Order Factor)			-.064	-.075	-.067	-.068
Academic Validation in the Classroom						
General Interpersonal Validation						
Habits of Mind						
Environmental "Pull" Variables			*.029*			*.031*
Discrimination and Bias						
Harassment						
Institutional Diversity			-.053	-.057	-.059	-.056
Degree Aspirations						
Age						
Sex: Female						
Children						
High School GPA						
Institutional Control				.020	.034	
Race: Student of Color						
Veteran						
Course Availability						
R-Square	.101	.052	.116	.111	.126	.093

Note. All coefficients are statistically significant (p<.05) unless italicized. (continued)

Table 4.12

Correlations Among Independent Variables in Structural Equation Models

Independent Variables		Full Sample	Student Veteran	Non-Veteran Student
Sex: Female	Age	-.327		-.401
Sex: Female	Veteran Status	-.227		
Sex: Female	High School GPA	.250	.182	.308
Sex: Female	Children			-.239
Sex: Female	Enrollment Status		-.221	
Sex: Female	Children			
Sex: Female	Institutional Control	-.227		-.314
Sex: Female	Race: SOC	.164	.223	.140
Age	High School GPA	-.330	-.275	-.392
Age	Children	.695	.670	.806
Age	Enrollment Status	-.522	-.465	-.583
Age	Institutional Control			.197
Age	Race: SOC		-.164	-.210
Veteran Status	Enrollment Status	.167		
Veteran Status	Institutional Control	*.149*		
High School GPA	Children	*-.187*		-.232
High School GPA	Enrollment Status	.224		.319
High School GPA	Institutional Control	*-.136*		
Children	Enrollment Status	-.420	-.337	-.452
Children	Institutional Control			.222
Institutional Diversity	Environmental "Pull" Variables	-.418	-.272	
Institutional Control	Race: SOC	-.161		-.222

Note. All coefficients are statistically significant ($p<.05$) unless italicized.

Table 4.13

Error Correlations in Structural Equation Models

Error Variables		Full Sample	Student Veteran	Non-Veteran Student
E6: At least one staff member has taken an interest in my development	E11: At least one faculty member has taken an interest in my development	.584	.554	.641
E7: Faculty believe in my potential to succeed	E10: Staff recognize my achievements	-.242		
E13: Missed class due to personal/family responsibilities	E14: Missed class due to employment	.318	.237	
E18: Faculty were able to determine my level of understanding of the course material	E19: Felt that faculty provided me with feedback that helped me assess my progress in class	.250	.305	.238
E37: Harassment	E38: Discrimination & Bias	.559	.353	.516
E43: Academic Self-Concept	E45: College GPA	.233	.352	.269
E45: College GPA	E47: Intent to Persist		-.299	
E42: Habits of Mind	E43: Academic Self-Concept	.094		

Note. All coefficients are statistically significant, $p<.05$.

Student veteran only model. With a well-fitted multi-group model, I attempted to fit the same model to the student veteran group data. However, convergence could not be achieved, and I had to begin, once again, with fitting separate portions of the model before arriving at a full model with good fit (S-B $\chi 2$ =327.6382; df=378, $p>.05$, CFI=.963; TFI=.959; RMSEA=.029). Standardized direct, indirect, and total parameter effects are shown in Table 4.11, correlations between independent variables in Table 4.12, and error correlations in Table 4.13. Figure 4.4

shows the full structural equation model fitted to the student veteran sample.

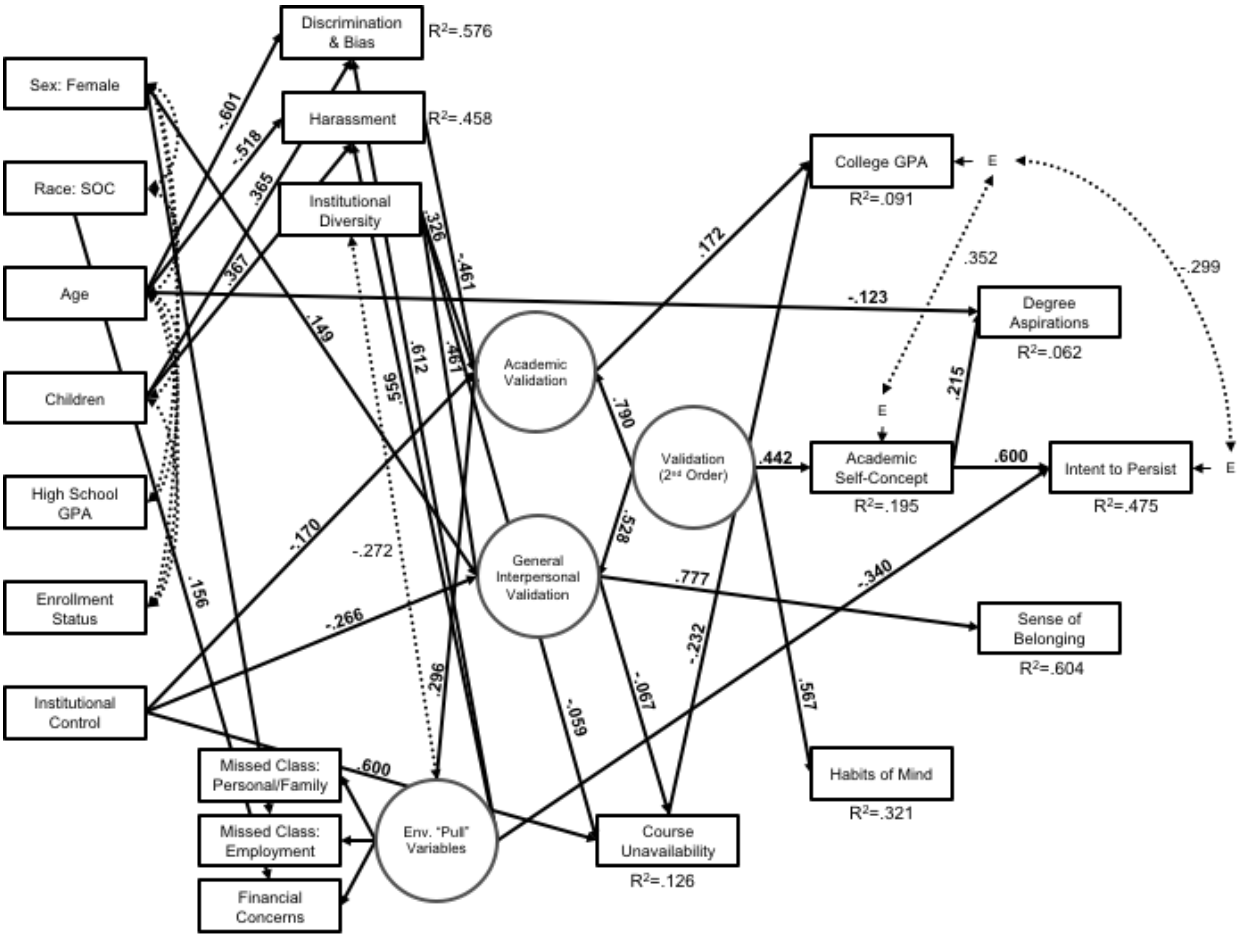

Figure 4.4. Structural equation model predicting student veterans' intentions to persist. Rectangles represent observed (DLE factors treated as observed variables), circles represent latent measures or factors, and unidirectional arrow represent regression coefficients. Covariances are represented by dotted two-way arrows. With the exception of error covariances, residual error terms and disturbances have been omitted from this figure. For simplicity, survey items associated with each validation measure are also omitted.

Direct effects on intention to persist. Student veterans' confidence in their academic abilities had the largest direct effect (β=.60) on their intent to persist, suggesting that confidence can overcome outside influences. These environmental "pull" variables, driven primarily by financial concerns as well as missing class due to employment and missing class due to personal/family reasons, were the only other factor to directly affect student veterans' intentions to persist with stronger pull factors correlating with reduced persistence intentions (β =-.34).

These employment and family responsibilities are consistent with a group that is older and more likely to have children, and this finding suggests that these external commitments have particular saliency for student veterans.

Indirect effects on intention to persist. While validation did not directly contribute to student veterans' persistence intentions, validation did significantly but indirectly relate to these plans operating through academic self-concept. Student veterans who perceived more validation from faculty and staff expressed greater confidence in their academic abilities, and more confident student veterans expressed stronger intentions to return for the following fall term. Figure 4.5 shows the histogram for academic self-concept scores for student veterans intending to remain at their institution and Figure 4.6 shows scores for those intending to depart their institution. These histograms indicated a general shift in the overall distribution of scores based upon persistence intention but it's notable that highly confidence students do not intend to return.

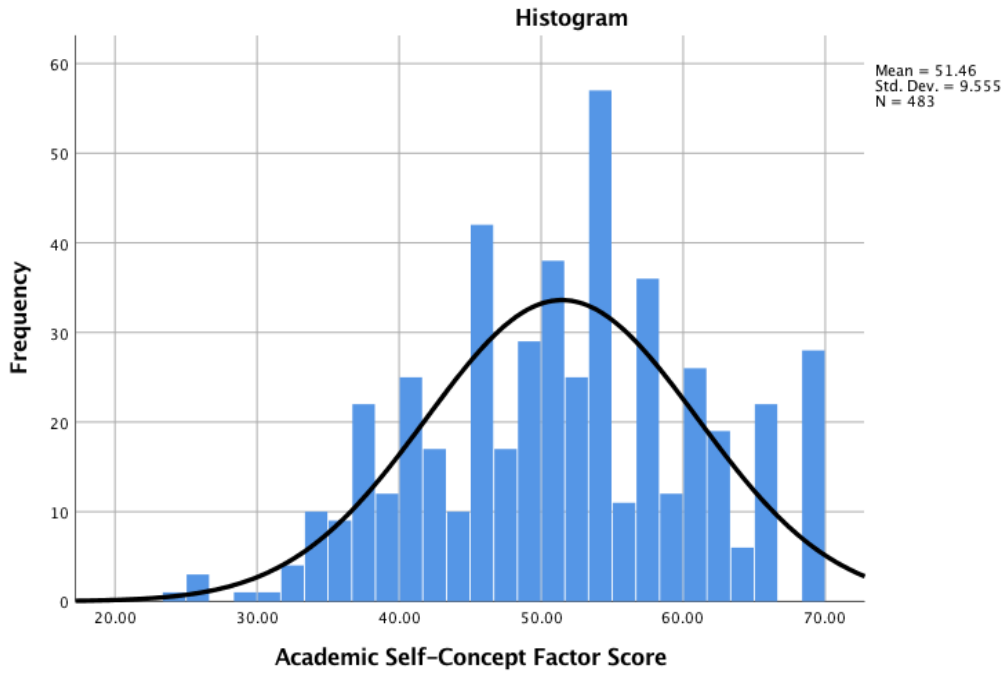

Figure 4.5. Academic self-concept scores of student veterans intending to return to their institutions.

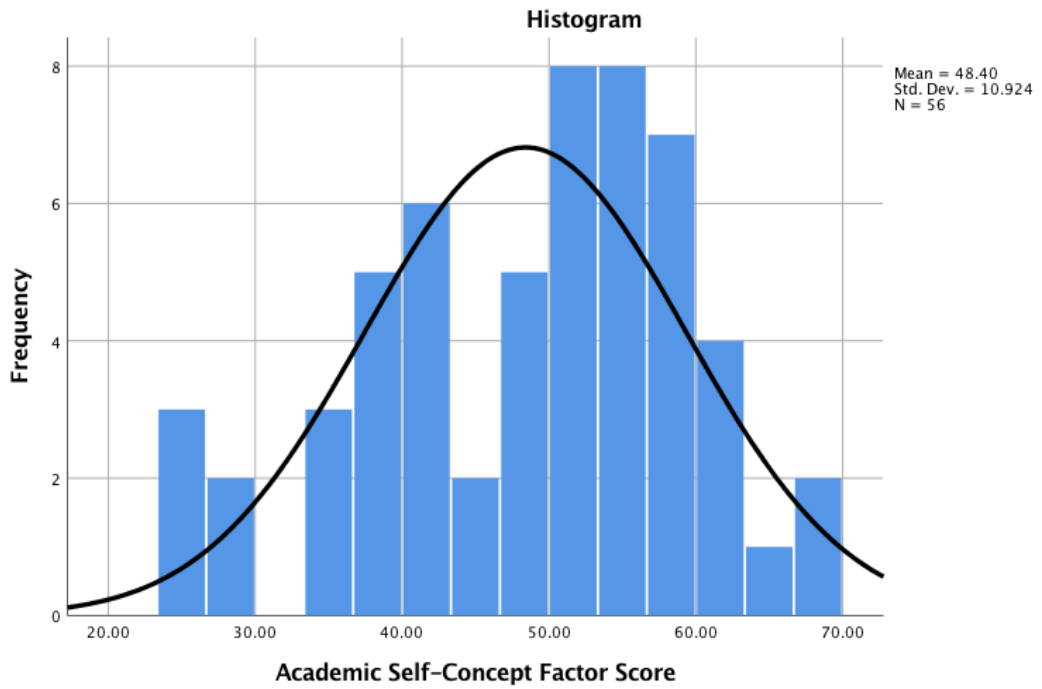

Figure 4.6. Academic self-concept scores of student veterans not intending to return to their institutions.

Effects of validation. Measures of validation had a positive direct effect on student veterans' sense of belonging, GPA, and habits of mind for lifelong learning, underlining the importance of staff and faculty actions in validating this group of students on key outcomes. While sense of belonging, was not an important part of student veterans' decision to remain at their institution, it was largely (β=.78) shaped by staff and faculty's attention to their development. The amount of validation student veterans experienced in the classroom significantly related to their grades, as students who perceived more frequent academic validation also earned significantly higher grades. In fact, correlated errors suggest the existence of omitted variables or paths that might explain shared variance between GPA and intent to persist. However, the model explains a relatively high amount of variance (47.5%) for intent to persist, so it is unclear how much more another variable or path could add to the model. Finally, validation also had a large, direct effect (β=.57) on habits of mind for lifelong learning. Student

veterans who received higher amounts of validation also reported higher frequent behaviors associated with academic success.

Direct effects on validation. Several factors directly affected academic validation and general interpersonal validation. First, student veterans attending public institutions perceived lower levels of validation (academic [β=-.17] and general interpersonal [β =-.27]) than their counterparts attending private institutions. Second, student veterans sensed less validation when they more frequently experienced threats or harassment (β =-.46). However, student veterans who perceived stronger commitments to diversity on the part of the campus tended to report more academic (β=.33) and interpersonal (β=.46) validation. The final model suggests student veterans' perceptions of validation from faculty and staff mediate the effects of campus climate on student outcomes, including their intent to persist.

Environmental "pull" variables provided a third direct effect (β=.30) on academic validation in the classroom. This finding has several possible explanations. First, faculty may sense when student veterans have outside commitments and reach out to these student more than those with lesser outside commitments. Second, these student veterans, with greater external commitments, may be more sensitive or appreciative of faculty outreach than their counterparts with lower external commitments and report receiving more frequent validation.

Finally, student veteran women report slightly higher levels (β=.15) of interpersonal validation from staff and faculty than their male counterparts. Similar to the previous finding regarding student veterans with outside commitments, this may indicate that women with a military background are also more appreciative of any outreach from staff and faculty than their male counterparts. Or, staff and faculty may give more attention to student veteran women.

Indirect effects on validation. In addition to its direct relationship with validation, the factor representing environmental "pull" also shared a significant, negative, indirect relationship with validation that operated via harassment. Student veterans who reported higher levels of outside pull also reported higher levels of harassment. However, in total, the effects of these outside influences were diminished and became statistically non-significant ($p>.05$) for academic validation in the classroom. Older student veterans also reported higher levels of academic validation while those with children reported lower levels. Older student veterans tended to report threats, harassment, or subtle forms of discrimination less frequently than their younger counterparts, suggesting either they are less sensitive or received less threats or discrimination than their younger counterparts. Older students were also more likely to have children and these family responsibilities may have limited exposure to issues of negative campus climate.

Academic achievement. As mentioned previously, academic achievement, measured by self-reported GPA, did not directly affect student veterans' persistence intentions, but its error covaried with the error terms for intent to persist and academic self-concept. Such covariance indicates a common cause, such as variable(s) missing from the model or not specified within the model, that would explain the relationship between the two variables (P. Bentler, personal communications, March 8, 2018). However, I was unable to determine a significant path, using available variables that also conformed to sound theory to account for variation in academic achievement.

Several measures indirectly correlated with college GPA. The largest indirect effect was the second order validation factor which was, as expected, associated with higher levels of academic and interpersonal validation. Student veterans who felt more validated by faculty and staff reported encountering course unavailability less frequently, and students who less

frequently reported courses to be unavailable tended to report higher college GPAs. Stronger perceptions of academic validation translated to higher GPAs. Other indirect effects were too small to mention or investigate further.

In summary, student veteran success and persistence in college was most significantly influenced by confidence in their academic abilities, the amount of validation they received from staff and faculty inside and outside of the classroom, and by outside influences. Validation was important not only in their decision to return to their college or university the following year, it also effected their sense of academic and social belonging on campus and their development of habits associated with lifelong academic success. In terms of campus climate, student veterans who perceived their campus to be more committed to diversity also experienced more overall validation. By contrast, student veterans who encountered frequent harassment also had less frequent validating experiences in the classroom.

Research Question 4 – Fitting the Student Veteran Model to Non-Veteran, Nontraditional Students

The fourth research question sought to determine the extent the model that predicts intent to persist for student veterans also fit nontraditional students. In short, the model predicting student veteran persistence does not fit the sample of non-veteran students and had to be modified. The initial attempt tested the final model for student veterans with the non-veteran matched sample, but this model never converged, which required me to fit separate portions of the model before achieving a good fit for the full model (S-B $\chi 2$ =383.63; df=367, p>.05, CFI=.959; TFI=.952; RMSEA=.032). Standardized direct, indirect, and total parameter effects are shown in Table 4.10, correlations between independent variables in Table 4.11, and error

correlations in Table 4.12. Figure 4.7 shows the full structural equation model fitted to the non-veteran student sample.

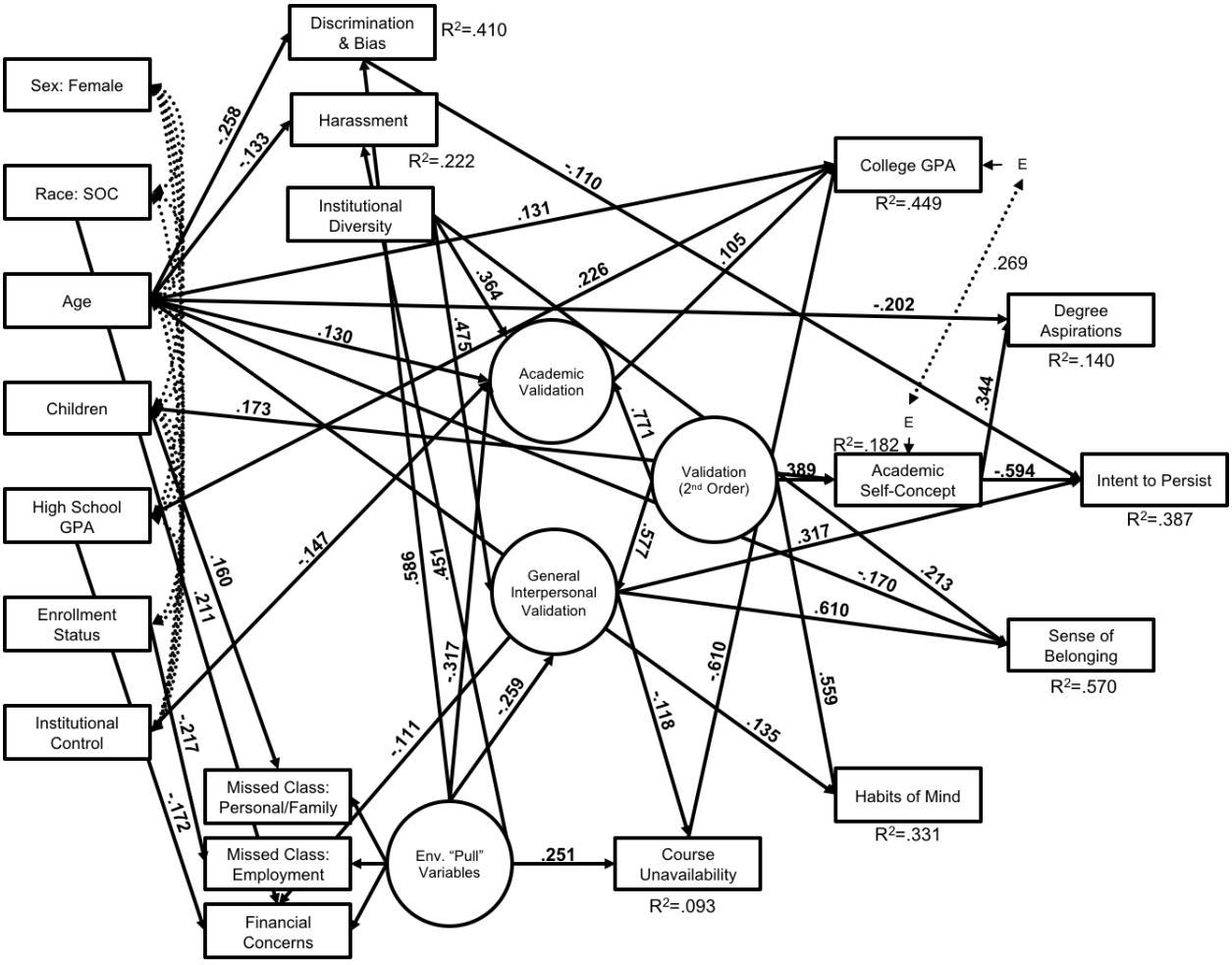

Figure 4.7. Structural equation model predicting non-veteran students' intentions to persist. Rectangles represent observed (DLE factors treated as observed variables), circles represent latent measures or factors, and unidirectional arrow represent regression coefficients. Covariances are represented by dotted two-way arrows. With the exception of error covariances, residual error terms and disturbances have been omitted from this figure. For simplicity, survey items or indicators of each validation measure are also omitted.

Direct effects on intention to persist. Similar to student veterans, non-veteran students' confidence in their academic abilities had a large, direct, significant effect on their intent to persist; however, the relationship was negative (β =-.59); non-veteran students with higher

confidence in their academic abilities expressed weaker persistence intentions. This negative relationship was unexpected and requires further investigation.

An independent samples t-test revealed there was no statistically significant ($p>.05$) difference in the mean scores for academic self-concept between non-veteran students ($\mu=49.99$) and students with a military background ($\mu=51.14$). However, as shown in Figure 4.8, there was a high number ($n=25$), relative to the total number ($n=43$), of non-veteran students with scores above 60 who also were unlikely to intend to return to their institution the following academic year. Interestingly, the difference in non-veteran students' average academic self-concept scores was not statistically significant when comparing the means for those intending to persist ($\mu=49.93$) against those not intending to persist ($\mu=50.66$).

Of the non-veterans not intending to return who also had academic self-concept scores above the overall mean, 19 out of 25 (76%) were 25 years of age or older. Older students tended to have lower degree aspirations ($\beta=-.20$) and increased family responsibilities (age and having children correlated at $r= 0.81$). The association between age and whether non-veteran students reported having children suggests family responsibilities may take priority over degree attainment. In fact, having children correlated ($\beta=.16$) with the frequency of missing classes due to personal or family reasons, which represented one of the three indicators of environmental pull.

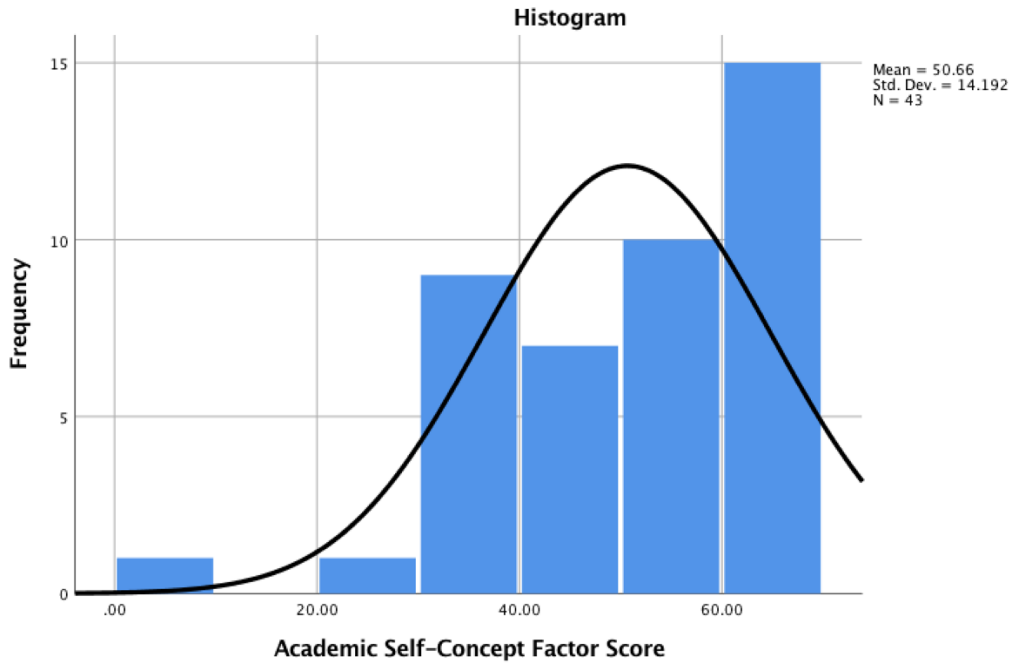

Figure 4.8. Academic self-concept scores of non-veteran students not intending to persist. There was a high number of non-veteran students who had a strong belief in their academic abilities but were not intending to return to their institution the following fall.

Absent in the student veteran model, general interpersonal validation significantly and positively correlated (β=.32) with non-veteran students' intentions to persist. Non-veteran students who had a stronger sense that staff and faculty attended to their development also had a greater likelihood to remain at their institution. While outside influences had a significant, negative direct effect on student veterans' persistence intentions (β=-.34), no such association emerged for non-veteran students. However, subtle forms of discrimination significantly albeit slightly negatively correlated with non-veteran students' intentions to return to their current institution for the next academic year. In other words, students without a military background who experienced more frequent forms of discrimination were also less likely to persist.

Indirect effects on intention to persist. Several measures had indirect effects on non-veteran students' intent to remain at their institution. First, outside influences had an indirect association with intent to persist via discrimination and bias and validation measures. Non-

veteran students who experienced stronger pull due to family, employment, and/or financial concerns also encountered more subtle forms of discrimination, and, in turn, were more likely to report plans drop out of their current institution. These same students who experienced more pull from outside influences also perceived less validation from staff and faculty, which reduced likelihoods of intending to re-enroll at their current institution. As mentioned previously, non-veteran students with children expressed greater confidence in their academic abilities, which indirectly corresponded with being less likely to intend to persist. Finally, students who more strongly felt their institution was committed to diversity also perceived higher levels of interpersonal validation from staff and faculty, which indirectly enhanced their likelihood to remain at an institution.

Effects of validation. Validation significantly correlated with other endogenous variables representing important student outcomes. For example, non-veteran students who perceived more validation from faculty and staff typically felt significantly more confident in their academic abilities (β=.39) and more frequently utilized habits of mind for lifelong learning (β=.56). They also had slightly higher grades (β=.12) and a greater sense of belonging (β=.35) to their campus. However, none of these outcomes affected persistence intentions for nontraditional students without a military background.

Direct effects on validation. Perceptions of institutional commitment to diversity had the largest positive effect on academic validation (β=.36) and interpersonal validation (β=.48). By contrast, outside influences had the largest negative association with academic validation (β=-.32) interpersonal validation (β=-.26). In other words, non-military affiliated students who perceived their college or university prioritized diversity on campus also believed that staff and faculty were attending to their academic development inside and outside of the classroom.

However, the negative association between environmental pull factors and validation suggests that non-veteran students who encounter the greatest challenges related to family, employment, and financing college also tend to perceive the least amount of support coming from faculty and staff. It is unclear the extent to which faculty and staff may overlook these individuals or the extent to which the daily challenges they face makes it more difficult to recognize more subtle forms of support and encouragement.

Academic achievement. Similar to the model for student veterans, correlated error terms between college GPA and academic self-concept covaried indicating a missing path or missing variable from the model. While nearly half (β=.45) of the college GPA's variance was explained by this model, a variable related to time spent studying or preparing for class may have enhanced the proportion of explained variance in college grades while also mediating the relationship between students' confidence in their academic abilities and their grades. Additionally, non-veteran students' college grades tended to be higher among students who perceived more frequent validation from faculty and staff (β=.11), were older (β=.13), and had earned higher grades in high school (β=.23). The significant, positive association between high school grades and college GPAs for non-veteran students represents an important distinction between this model and that of student veterans. For student veterans, high school grades were not a significant predictor of college grades indicating that their experience in the military might be more important to their academic achievement than their high school academic achievement. By contrast, non-veteran students who more frequently struggled to enroll in courses needed for their degree programs also got lower grades.

Indirectly, GPA significantly correlated with outside influences via academic validation (β=-.21). Students with no military background who experienced greater pull from outside

influences also perceived a faculty less concerned about their academic success, and this type of validation was positively associated with GPA.

In summary, non-veteran student success and persistence in college was most significantly related to confidence in academic abilities, the amount of attention to their development received from staff and faculty, outside influences, and campus' commitment to diversity. Surprisingly, higher confidence in academic abilities corresponded with a reduced likelihood to intend to re-enroll at their current institution for the following fall term, leading me to search for plausible explanations. The generally lower degree aspirations and increased family responsibilities among older non-veteran students suggest bachelor's degree attainment may be less urgent compared to other competing priorities among non-veteran students with additional years of life experience. While these associations suggest age as a factor in understanding differences in non-veteran students' likelihood to intend to persist, age did not have a statistically significant direct or indirect link to intent to persist. The increased likelihood of departure from their current institution among non-veteran students with greater confidence in their academic abilities may relate to the possibility of opportunities outside of college, such as a well-paying job, that ultimately lures them away from their campus.

Validation related to several measures of success for non-veteran students. First, students who received more interpersonal validation also were more likely to remain at their institution and expressed a stronger connection to the institution. Second, academic validation in the classroom corresponded with higher college grades. Third, students who received more validation from faculty and staff tended to have greater confidence in their academic capacity. As these results indicate, similar to student veterans, validation perceived by non-veteran students appears to play a central role in their success. The salience of external forces was less

apparent in explaining the persistence intentions of non-veteran students compared to student veterans; however, family responsibilities, work commitments, and financial concerns collectively mitigated the extent to which non-veteran students perceived or experienced validation coming from faculty and staff. Additionally, non-veteran students who had their attention diverted by external factors seemed more vulnerable to or aware of instances of discrimination and harassment, which undermined their intentions to persist at their current institution.

Research Question 4a– Moderating Effects of Race/Ethnicity.

The first sub-question associated with the fourth research question sought to determine how race/ethnicity moderate the relationship between validation, veteran status, and intent to persist. In order to answer this research questions, I tested reduced models to samples of student veterans of color and non-veteran students of color. I began by applying the student veteran model (Figure 4.3), but convergence was not possible. Next, I fit portions of the model, beginning with validation measures and intent to persist, and I diligently added variables/specified paths until the model achieved acceptable fit for student veterans of color (S-B $\chi 2$ =93.3; df=121, p>.05, CFI=.968; TFI=.959; RMSEA=.059). This final model is depicted in Figure 4.9, its direct, indirect, and total effects in Table 4.13, and covariances in Table 4.14.

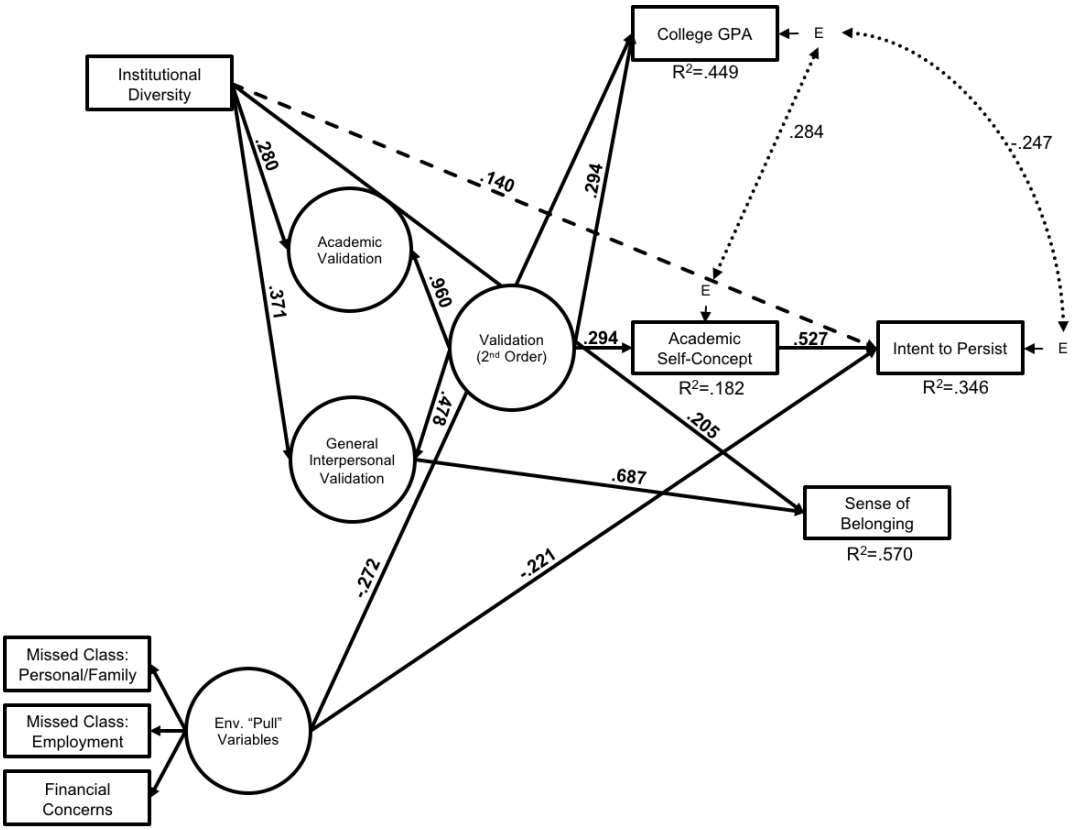

Figure 4.9. Structural equation model predicting intent to persist for student veterans of color. Rectangles represent observed (DLE factors treated as observed variables), circles represent latent measures or factors, and unidirectional arrow represent regression coefficients. Covariances are represented by dotted two-way arrows. Elements, such as disturbances, have been removed to highlight other parameters. Dashed error indicates a non-significant path.

The model for student veterans of color did not fit the data well for the sample of non-veteran students of color (n=267). When modifying the model depicted in Figure 4.9 to fit the data for non-veteran students, the significant direct paths from environmental pull factors and academic self-concept to intentions to persist became non-significant, representing the most important distinction between the two models. The non-veteran students of color model has a good fit (S-B χ2 =106.91; df=124, p>.05, CFI=.970; TFI=.964; RMSEA=.056). Figure 4.10 presents the non-veteran students of color model, and the parameter estimates for direct, indirect, and total effects appear in Table 4.14 and covariances in Table 4.15.

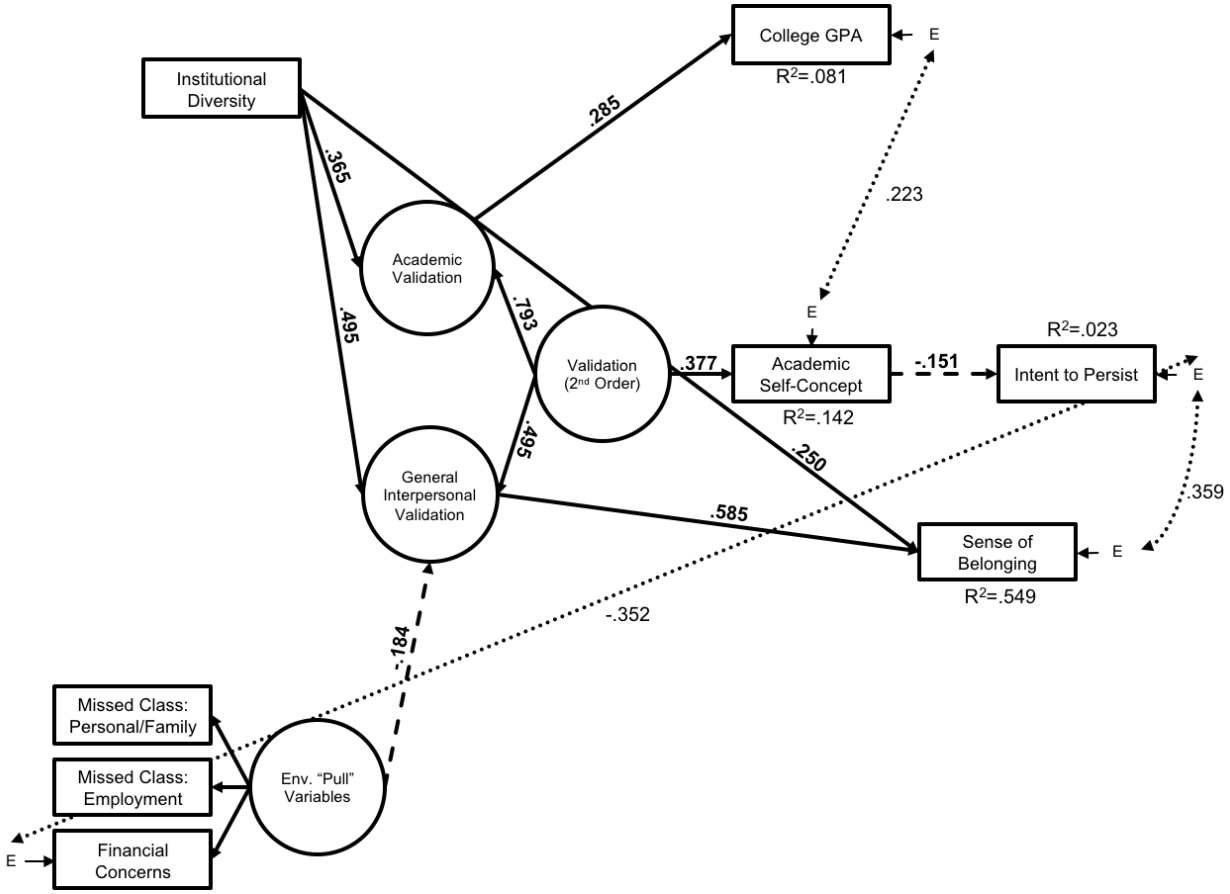

Figure 4.10. Structural equation model predicting intent to persist for non-veteran students of color. Rectangles represent observed (DLE factors treated as observed variables), circles represent latent measures or factors, and unidirectional arrow represent regression coefficients. Covariances are represented by dotted two-way arrows. Elements, such as disturbances, have been removed to highlight other parameters.

Table 4.14

Standardized Total, Direct, and Indirect Effects for Students of Color, Veteran and Non-Veteran, Structural Equation Models

	Intent to Persist		Academic Validation in the Classroom	
Predictor Variable	Student Veterans of Color (n=278)	Non-Veteran Students of Color (n=267)	Student Veterans of Color (n=278)	Non-Veteran Students of Color (n=267)
Total				
Validation (Second Order Factor)	.155	*-.057*	.960	.793
Academic Validation in the Classroom				
General Interpersonal Validation				
Academic Self-Concept	.527	*-.151*		
Environmental "Pull" Variables	-.221			
Sense of Belonging				
Institutional Diversity	*.140*		.280	.365
Direct				
Validation (Second Order Factor)			.960	.793
Academic Validation in the Classroom				
General Interpersonal Validation				
Academic Self-Concept	.527	*-.151*		
Environmental "Pull" Variables	-.221			
Sense of Belonging				
Institutional Diversity	*.140*		.280	.365
Indirect				
Validation (Second Order Factor)	.155	*-.057*		
Academic Validation in the Classroom				
General Interpersonal Validation				
Academic Self-Concept				
Environmental "Pull" Variables				
Sense of Belonging				
Institutional Diversity				
R-Square	.346	.023	1.000	.761

	General Interpersonal Validation		Academic Self Concept	
Predictor Variable	Student Veterans of Color (n=278)	Non-Veteran Students of Color (n=267)	Student Veterans of Color (n=278)	Non-Veteran Students of Color (n=267)
Total				
Validation (Second Order Factor)	.478	.495	.294	.377
Academic Validation in the Classroom				
General Interpersonal Validation				
Academic Self-Concept				
Environmental "Pull" Variables		*-.184*		
Sense of Belonging				

Institutional Diversity	.371	.491		
Direct				
Validation (Second Order Factor)	.478	.495	.294	.377
Academic Validation in the Classroom				
General Interpersonal Validation				
Academic Self-Concept				
Environmental "Pull" Variables		*-.184*		
Sense of Belonging				
Institutional Diversity	.371	.491		
Indirect				
Validation (Second Order Factor)				
Academic Validation in the Classroom				
General Interpersonal Validation				
Academic Self-Concept				
Environmental "Pull" Variables				
Sense of Belonging				
Institutional Diversity				
R-Square	.366	.520	.086	.142

	Sense of Belonging		College GPA	
Predictor Variable	Student Veterans of Color (n=278)	Non-Veteran Students of Color (n=267)	Student Veterans of Color (n=278)	Non-Veteran Students of Color (n=267)
Total				
Validation (Second Order Factor)	.329	.289	.254	.226
Academic Validation in the Classroom				.285
General Interpersonal Validation	.687	.585		
Academic Self-Concept				
Environmental "Pull" Variables		*-.108*	-.272	
Sense of Belonging				
Institutional Diversity	.460	.537		.104
Direct				
Validation (Second Order Factor)			.254	
Academic Validation in the Classroom				.285
General Interpersonal Validation	.687	.585		
Academic Self-Concept				
Environmental "Pull" Variables			-.272	
Sense of Belonging				
Institutional Diversity	.205	.250		
Indirect				
Validation (Second Order Factor)	.329	.289		.226
Academic Validation in the Classroom				
General Interpersonal Validation				
Academic Self-Concept				
Environmental "Pull" Variables		*-.108*		
Sense of Belonging				
Institutional Diversity	.255	.287		.104
R-Square	.618	.549	.139	.081

Note. All parameters are significant (p<.05) unless italicized.

Table 4.15

Error Correlations in Structural Equation Models for Students of Color, Veteran and Non-Veteran.

Independent Error Variables		Student Veterans of Color (n=278)	Non-Veteran Students of Color (n=267)
E6: At least one staff member has taken an interest in my development	E7: Faculty believe in my potential to succeed	.345	
E6: At least one staff member has taken an interest in my development	E11: At least one faculty member has taken an interest in my development	.540	.654
E7: Faculty believe in my potential to succeed	E10: Staff recognize my achievements	*.141*	
E8: Staff encourage me to get involved in campus activities	E47: Persist		.313
E10: Staff recognize my achievements	E11: At least one faculty member has taken an interest in my development	.262	
E18: Faculty were able to determine my level of understanding of the course material	E19: Felt that faculty provided me with feedback that helped me assess my progress in class	.344	
E22: Financial Concerns	E47: Persist		-.352
E34: Sense of Belonging	E47: Persist		.359
E43: Academic Self-Concept	E45: College GPA	.284	.223
E45: College GPA	E47: Persist	-.247	

Note. All coefficients are statistically significant ($p<.05$.), unless italicized.

A comparison of the two models reveals substantial differences between student veterans of color and non-veteran students of color. Receiving more validation from faculty and staff indirectly (β=.16) improves intentions to persist for student veterans of color, operating through academic self-concept. Additionally, academic self-concept (β=0.53) directly enhances the likelihood student veterans of color will intend to re-enroll for the next academic year while environmental "pull" factors (β=-.22) reduce their chances of expecting to re-enroll; however, these same relationships are not statistically significant for non-veteran students of color.

Measures of validation were important to several other outcomes in both models besides intent to persist. First, validation had a direct, positive influence on both groups of students' academic self-confidence. Students of color receiving more attention to their academic development or experiencing more faculty validating actions in the classroom also have more

confidence in their academic abilities. Second, validation affects student achievement as measured by GPA. For student veterans of color, receiving more frequent validation (β=.29) contributed to earning higher grades in college, and this association also holds for the sample of non-veteran students. Finally, students of color with and without military backgrounds established stronger connections to the institution when they more frequently sensed support and encouragement from faculty and staff.

Student veterans and non-veteran students of color felt more validated if they also perceived a stronger commitment to diversity on their campus, indicating that students of color who more strongly believe their campuses promote diversity also perceive more frequent attention to their academic development by staff and faculty. Finally, increased perceptions of an institution's commitment to diversity also corresponded with students establishing stronger ties to the institution.

Along with intent to persist, outside influences, causing students to miss classes or to be concerned about their finances, negatively affected the grades (β=-.27) for student veterans of color, but was not a significant predictor in the model for non-veteran students of color.

Research Question 4b– Moderating Effects of Gender.

The second sub-question associated with the fourth research question sought to determine how gender moderates the relationship between validation, veteran status, and intent to persist. I fitted a reduced model predicting intent to persist to the entire sample of women (n=369) rather than to sub-samples of women based upon veteran status (student veteran women, n= 152; non-veteran women students, n=217), as models for the sub-samples failed to converge. The best-fitting model for the sample of women student veterans and non-veteran students had mediocre fit (S-B $\chi 2$ =159.11; df=137; p>.05, CFI=.95; TFI=.94; RMSEA=.07). Figure 4.11 graphically

depicts the structural model, while Table 4.16 lists direct, indirect, and total effects, and Table 4.17 list error correlations.

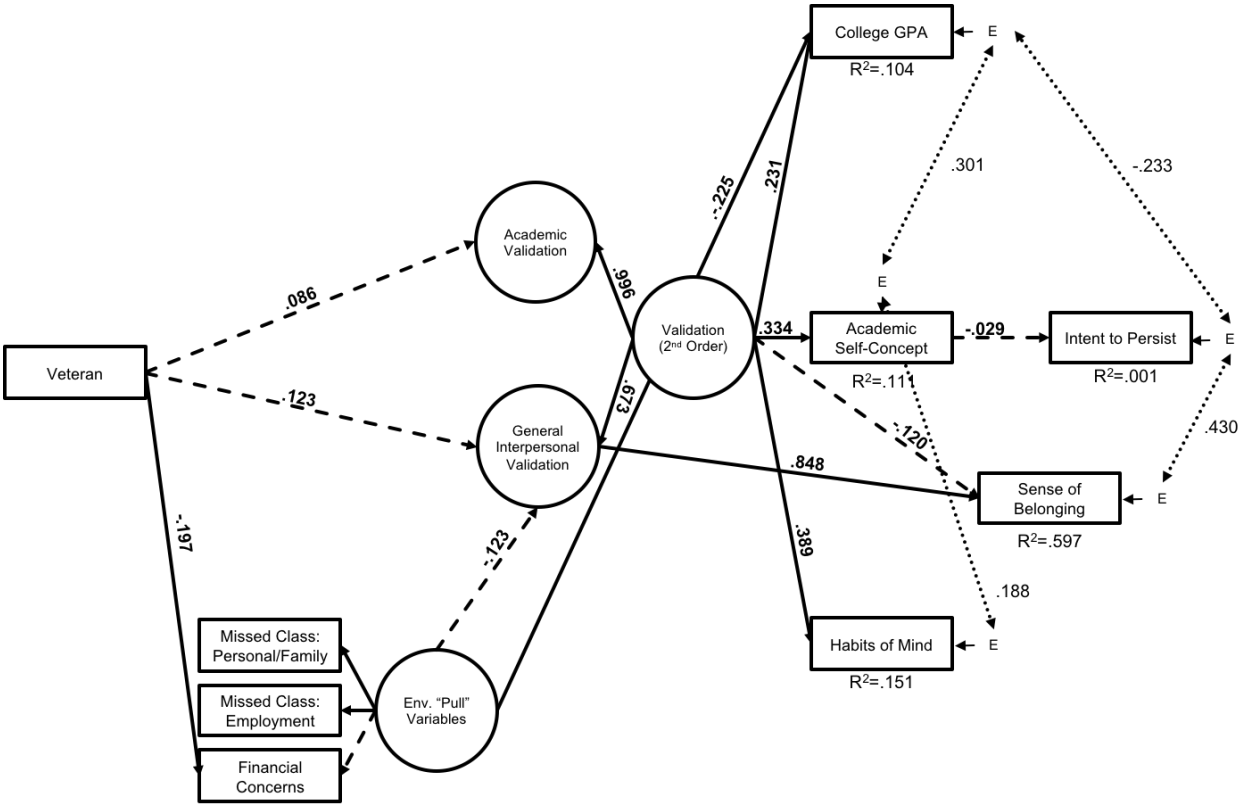

Figure 4.11. Structural equation model predicting intent to persist for student veteran and non-veteran student women. Rectangles represent observed (DLE factors treated as observed variables), circles represent latent measures or factors, and unidirectional arrow represent regression coefficients. Elements, such as disturbances and error terms, have been removed to highlight other parameters. Dashed lines indicate non-significant paths and dotted lines represent correlated error terms.

As depicted in Figure 4.11, none of the variables included in the model significantly predicted women's intention to persist. Error terms associated with college grades and women's intentions to persist significantly correlated, and that association is modeled in Figure 4.11; however, these relationships only indicated that the model omitted a measure to account for the shared variance between achievement and persistence intentions. Despite the model's inability to explain differences in women's persistence intentions, several other relationships are worth

noting, especially as they relate to validation measures and whether or not a woman student is also a veteran.

First, veteran status did not differentiate the extent to which women experienced validation, as women student veterans and their non-veteran counterparts perceived similar levels of validation. This finding suggests that faculty do not alter the frequency or intensity of their interactions with nontraditional college students who identify as women. This model does highlight one difference between the two groups of women – women student veterans have significantly less (β=-.20) concern with financing college than their non-veteran counterparts. This might be due to educational benefits acquired for serving in the military.

Even though validation does not predict intent to persist for this matched group of women, it remains important for several reasons. First, women who perceive more validation from faculty and staff tend to earn higher grades, more frequently utilize habits of mind for lifelong learning, and express greater confidence in their academic abilities. Additionally, women who more strongly agree that faculty and staff attend to their academic development also a greater sense of social and academic integration.

Outside influences did not correlate with women students' intent to persist at their institution, but women with greater family responsibilities or work commitments tended to earn lower grades in college. Unlike the previous models, financial concerns did not contribute significantly to this factor, making it more likely that the pull women felt had to do more with conflict with work or family responsibilities.

Table 4.16

Standardized Total, Direct, and Indirect Effects for the Student Women Structural Equation Model

Predictor Variable	Intent to Persist	Academic Validation in the Classroom	General Interpersonal Validation	Academic Self-Concept
Total				
Validation (Second Order Factor)	*-.010*	.996	.673	.334
Academic Validation in the Classroom				
General Interpersonal Validation				
Academic Self-Concept	*-.029*			
Environmental "Pull" Factor			*-.123*	
Veteran		*.086*	*.123*	
Direct				
Validation (Second Order Factor)	*-.029*	.996	.673	.334
Academic Validation in the Classroom				
General Interpersonal Validation				
Academic Self-Concept				
Environmental "Pull" Factor			*-.123*	
Veteran		*.086*	*.123*	
Indirect				
Validation (Second Order Factor)	*-.010*			
Academic Validation in the Classroom				
General Interpersonal Validation				
Academic Self-Concept				
Environmental "Pull" Factor				
Veteran				
R-Square	.001	1.000	.484	.111

Predictor Variable	College GPA	Sense of Belonging	Habits of Mind	Financial Concerns
Total				
Validation (Second Order Factor)	.231	.451	.389	
Academic Validation in the Classroom				
General Interpersonal Validation		.848		
Academic Self-Concept				
Environmental "Pull" Factor	-.225	*-.104*		*.138*
Veteran		*.104*		-.197
Direct				
Validation (Second Order Factor)	.231	*-.120*	.389	
Academic Validation in the Classroom				
General Interpersonal Validation		.848		
Academic Self-Concept				
Environmental "Pull" Factor	-.225			*.138*
Veteran				-.197
Indirect				
Validation (Second Order Factor)		.571		
Academic Validation in the Classroom				
General Interpersonal Validation				
Academic Self-Concept				
Environmental "Pull" Factor		*-.104*		
Veteran		*.104*		
R-Square	.104	.597	.151	.058

Note. All coefficients are statistically significant (p<.05) unless italicized.

Table 4.17

Error Correlations in Structural Equation Models for Student Women

Independent Error Variables		Correlation
E6: At least one staff member has taken an interest in my development	E11: At least one faculty member has taken an interest in my development	.605
E7: Faculty believe in my potential to succeed	E10: Staff recognize my achievements	-.227
E18: Faculty were able to determine my level of understanding of the course material	E19: Felt that faculty provided me with feedback that helped me assess my progress in class	.210
E34: Sense of Belonging	E47: Intent to Persist	.430
E42: Habits of Mind	E43: Academic Self-Concept	.188
E43: Academic Self-Concept	E45: College GPA	.301
E45: College GPA	E47: Intent to Persist	-.233

Note. All coefficients are statistically significant ($p<.05$.).

Summary of Hypotheses Tested

Table 4.18 summarizes the results of each hypothesized relationship within the structural equation models. Unfortunately, not all hypothesized relationships could be conclusively tested due to the process of fitting such complex models. However, important relationships were determined for each group of students.

Table 4.18

Hypotheses Testing: Summary of Significant Effects by Group

Hypothesis 1: Higher rates of validation will predict a greater sense of belonging, academic self-concept, grade point average, and intent to persist for each group of students.				
Predictor Variable	Sense of Belonging	Academic Self-Concept	College GPA	Intent to Persist
Validation (Second-Order)				
Student Veterans	+	+	+	+
Non-Veteran Students	+	+	+	
Student Veterans of Color	+	+	+	+
Non-Veteran Students of Color	+	+	+	
Women	+	+	+	
Academic Validation				
Student Veterans			+	
Non-Veteran Students			+	
Student Veterans of Color				
Non-Veteran Students of Color			+	
Women				

General Interpersonal Validation					
Student Veterans	+		+		
Non-Veteran Students	+		+	+	
Student Veterans of Color	+				
Non-Veteran Students of Color	+				
Women	+				

Hypothesis 2: Pull from outside influences will predict lesser validation, sense of belonging, grade point average, and intent to persist for each group of students.

Predictor Variable	Academic Validation	General Interpersonal Validation	Sense of Belonging	College GPA	Intent to Persist
Environmental "Pull" Variables					
Student Veterans				-	-
Non-Veteran Students	-	-	-	-	-
Student Veterans of Color				-	-
Non-Veteran Students of Color					
Women				-	

Hypothesis 3: Negative campus racial climate will predict lesser validation, sense of belonging and intent to persist for each groups of students, while the positive campus climate will have the opposite effect.

Predictor Variable	Academic Validation	General Interpersonal Validation	Sense of Belonging	Intent to Persist
Negative Campus Climate (Discrimination & Bias/Harassment)				
Student Veterans	-			
Non-Veteran Students				-
Student Veterans of Color				
Non-Veteran Students of Color				
Nontraditional Women Students				
Positive Campus Climate (Institutional Commitment to Diversity)				
Student Veterans	+	+	+	
Non-Veteran Students	+	+	+	+
Student Veterans of Color	+	+	+	
Non-Veteran Students of Color	+	+	+	
Women				

Hypothesis 4: Academic self-concept will predict greater intent to persist for each group of students.

Predictor Variable	Intent to Persist
Academic Self-Concept	
Student Veterans	+
Non-Veteran Students	-
Student Veterans of Color	+
Non-Veteran Students of Color	
Women	

Note. Plus (+) symbols indicate there as a positive relationship between predictor variable and dependent variables while negative (-) signs indicate the opposite.

Conclusion

This chapter provided the results of descriptive analyses, confirmatory factor analysis, and structural equation modeling aimed at answering this study's four research questions and, ultimately, determining the relationship between student veterans' sense of belonging and their intention to return to the respective college or university the next year. Two measures of validation, academic validation in the classroom and general interpersonal validation, were slightly modified and tested for student veterans and their matched, non-veteran counterparts with statistical tests indicating they operate similarly for both groups of students. Additionally, validation emerges as central in student veterans' persistence intentions, including those of color. For both of these groups, validation was found to positively affect persistence intentions indirectly through their academic self-concept. Perceiving more frequent validation from faculty and staff also corresponded with earning higher grades, using healthy lifelong learning habits more frequently, and establishing stronger ties to the institution.

Many of these relationships also held for the sample of non-veteran students. However, differences between models suggest that a model for student veterans cannot be used for equally matched, non-veteran students. Most notably, higher confidence in academic abilities corresponded to a higher likelihood to intend to persist for student veterans but had the opposite effect for non-veteran students. Additionally, outside influences directly reduced student veterans' likelihood to persist, but only had a small indirect effect on non-veteran students' persistence decisions. The next chapter elaborates on these findings, places them in the context of existing literature, and offers implications for researchers, policymakers, and practitioners.

CHAPTER 5: DISCUSSION

Nearly 17 years after the September 11, 2001 terrorist attacks, United States military servicemembers continue to be deployed to various locations throughout the world, including Afghanistan, Iraq, Syria, South Korea, and the continent of Africa (Defense Manpower Data Center, 2017). Having faced differing conditions, sometimes including combat, each returning servicemember eventually begins the difficult task of returning to civilian life. The government has long recognized the challenges associated with this transition and established programs to aid its transitioning servicemembers.

While government programs and benefits, such as updated versions of the GI Bill and the Department of Defense's (DoD) Transition Assistance Program (TAP), significantly aid transitioning servicemembers in overcoming financial and cultural challenges (Altschuler & Blumin, 2009; Cate, Lyon, Schmeling, & Bogue, 2017; GAO, 2017), more work remains to ensure a smoother, more seamless entry into a civilian lifestyle. Specifically, substantial numbers of veterans enroll in college shortly after transitioning into civilian life yet never complete their degrees (Cate, 2014; Cate et al., 2017; VA, 2015). By focusing on student veterans and attempting to understand the factors that partially explain differences in their decisions to persist in college versus depart before obtaining their degrees, this study offers new insight as to how higher education administrators, policymakers, practitioners, and faculty members can design and implement new policies and programs – or make adjustments to existing ones – aimed at improving the likelihood of success for veterans who take advantage of the option to pursue a college degree following their service in the U.S. military.

This final chapter serves several purposes. First, it summarizes the key findings from descriptive analyses, confirmatory factor analysis, and structural equation modeling previously

covered in depth in Chapter 4. Second, it provides interpretations and meanings of the findings and puts them in the context of existing literature on student veterans, student engagement and persistence/retention, and validation theory. Third, it provides implications in terms of theory, research, and practice to translate the findings into tangible solutions to facilitate student veteran success. Lastly, it provides directions for future research on student veterans so that the researchers can continue to add to the growing body and find ways to better understand this important group of students.

Summary of Findings

Descriptive comparisons between student veterans and non-veteran students. Given the literature summarized in Chapter 2, I expected to find significant differences between student veterans and their civilian counterparts on measures pertaining to demographic characteristics and pre-college experiences, and the analyses descriptive analyses revealed a number of ways that distinguish student veterans from non-veteran, nontraditional students. First, college students with military experience are more racially and ethnically diverse, with a slightly larger proportion being of color than students without a military background. Second, student veterans tend to be significantly older than their colleagues who enroll in college without having served in the military, and the average gap in age between veteran and non-veteran students depends largely on the number of years student veterans were enlisted in the military. Third, men are significantly over-represented among populations of student veterans relative to their representation within the U.S. higher education system, which I expected to find given the gender composition found among enlisted members of the U.S. military (DoD, 2014). Fourth, student veterans are more likely to be the first in their families to attend college than non-veteran students, highlighting the importance of programs to increase student veteran enrollment and

persistence. It is very likely the case that the GI Bill provides access to college for many first-generation students who, without such financial support, would never have considered pursuing a college degree as a possibility. Lastly, student veterans mostly earned B's in high school compared to their non-veteran counterparts who mostly earned A's; however, as other analyses suggest, high school grades may be a poor measure to use when evaluating admissions applications from prospective student veterans.

Disaggregating the data even further by categories of race and gender reveals similar patterns of difference on measure of age, family responsibilities, high school grades, and first-generations status. In fact, the two groups (i.e., veteran and non-veteran) were so different, especially in terms of gender, that it was difficult to find one-to-one matches using background characteristics. After matching, student veterans remained more likely to be male than their matched, non-veteran counterparts. In other words, the gender bias toward men in the sample continued of student veterans persisted even after completing the matching process using propensity scores.

Statistically similar structural properties of validation. Hurtado, Cuellar, and Guillermo-Wann (2011) operationalized Rendòn's (1994) concept of validation and developed latent measures or constructs to be used with the Diverse Learning (DLE) survey. Hurtado and colleagues tested these measures for students of color and White students with only slight differences existing between the two groups. The current study used Hurtado et al.'s (2011) two measures of validation, academic validation in the classroom and general interpersonal validation, to determine whether the structural properties of each would hold for a sample of student veterans. Despite the DLE survey no longer asking two of the original items included in Hurtado's validation factors, the remaining survey items loaded on to the same corresponding

factors with remarkably consistent parameter estimates as those originally identified by Hurtado and colleagues for students of color. Additionally, invariance testing revealed that the indicators of validation have equivalent salience for student veterans and matched, nontraditional, non-veteran students. Comparing these two latent measures based upon students' veteran status suggests that student veterans experience significantly higher levels of validation from staff and faculty inside and outside of the classroom than their non-veteran counterparts. Having confirmed the structural properties of these two latent measures, I then moved forward with using the validation constructs in a structural model to understand how validation and several other perceptions and experiences in college correlated with student veterans' intentions to persist.

Validation and its indirect relationship with persistence intentions for student veterans. I used Nora's (2003) model of student retention to fit a hypothesized structural equation model to combined sample of student veterans and their matched, non-veteran student veterans. However, this model proved to be problematic as evidenced by its failure to converge; therefore, it had to be severely modified. Although Nora's model and the available DLE survey items did not perfectly align, the hypothesized model's failure to converge primarily relates to the difficulty of using complex conceptual models with actual data. These models may consider every aspect related to the student experience in higher education, but their usefulness in actual analysis is limited due to analysts' inability to fully capture all aspects of college life posited in the model, issues of multicollinearity, and oftentimes the conceptual model insufficiently defines proposed measures, which can make operationalization much more challenging.

Second, in the model, and subsequent models, validation proved to be very important for its indirect effects on students' intentions to persist and other important outcomes. Students who

experienced more validation also had more confidence in their academic abilities, and students with higher confidence also had higher degree aspirations, which predict increased likelihoods of intending to persist at their respective institutions. Validation also correlated with a greater sense of belonging, higher college grades, and more frequently engaging in behaviors associated with lifelong learning.

After confirming a good fit for the full sample of student veterans and their non-veteran peers, I applied that baseline model to the sub-sample of student veterans. Model fit statistics suggested modifications to the baseline model would be necessary in order to achieve acceptable fit. After adjusting the baseline model, analyses revealed that, for students with a military background, validation remained an important direct factor in their overall success and an indirect factor in their intention to remain at their institution. Student veterans who experienced more frequent validation from faculty and staff also reported a greater sense of belonging to their institution, expressed more confidence in their academic abilities, earned higher grades in college, and had an increased likelihood of intending to persist at their current institution. Some of these effects were indirect; student veterans who felt more validated also had more confidence in their academic abilities, and enhanced academic confidence was associated with a greater likelihood to intend to remain at their respective college.

Although validation as a whole was associated with higher grades, students who received more frequent validation from faculty in the classroom (e.g., encouragement to ask questions in class) also tended to earn better grades than other student veterans who reported receiving less frequent validation from faculty. Not surprisingly, student veterans who more readily received validating, encouraging, or supportive messages or signals from faculty and staff tended to also

feel more strongly integrated into the academic and social environments of their respective campuses.

While validation was central to student veteran success and associated with those seeking to continue pursuing a degree at their respective college, outside influences continued to compete with student veterans' ability/desire to remain in college. Factors that were associated with pulling student veterans away from college included employment and family responsibilities, which caused some student veterans to frequently miss class or concerns with their abilities to pay for their education. While student veteran women missed fewer classes due to employment, student veterans of color reported more concern with financing than their White counterparts.

In addition to highlighting how validation related to various measures of college outcomes, the model also provides insight as to the demographic and pre-college factors that explain variation in frequency that student veterans receive these messages. First, student veteran women perceived validation from faculty and staff at a significantly higher rate than their male counterparts. Additionally, students at public institutions on average reported significantly less interpersonal and classroom validation compared to their peers enrolled at private four-year colleges. Lastly, student veterans who more strongly perceived their institutions were committed to diversity also reported higher levels of validation coming from faculty and staff. By contrast, students who more frequently dealt with harassment also tended to perceive less frequent or lower levels of concern and attention being expressed by faculty, which suggests that direct personal experiences with discrimination and harassment may mitigate or constrain the extent to which student veterans experience validation both inside and outside of class.

Validation directly and indirectly relates to persistence intentions of non-veteran students. The model predicting intent to persist for student veterans differed from the model

predicting the same for non-veteran students who were matched on background characteristics with the veteran sample. Validation remained central to the model, but rather than only having an indirect relationship with persistence intentions as it did for student veterans, validation in the model for non-veteran students also showed a significant, direct association with non-veteran students' intentions to return to their current institution for the following fall term. For the same students, receiving greater or more frequent validation also equated to enhanced confidence in academic abilities. However, unlike the positive relationship between academic self-concept and intent to persist found for student veterans, non-veteran students who expressed more academic confidence were less likely to intend to stay at their college or university. It is surprising that some of the most academically confident non-veteran students tend to have a greater risk of not returning to their current institution for the following fall term. It could be that some of these students intend to enroll at a different institution, perhaps transferring to a more academically competitive college or university. Alternatively, this finding may relate to one of the limitations of this study in that the model may have failed to capture one or more external pull factors (e.g., family responsibilities, employment opportunities or obligations) that may help to explain why such confident non-veteran students do not intend to return to their current institution for the following term.

Interpretation and Meaning of Significant Findings

Theory of validation. This study draws from Rendón's (1994) theory of validation where she questions why nontraditional students are being forced to adapt to traditional college environments created for privileged, White males, even though the demographic compositions of colleges and universities have changed. She posits that this type of learning environment leaves nontraditional students "alienated and intimidated" (p. 34) and insists that institutions of higher

education must adapt to meet the needs of diverse student bodies. These students, Rendón (1994) finds, can be transformed and she makes the case by carefully linking their confidence to "faculty-initiated actions of an academic nature" (p. 40) and "[v]alidating actions of an interpersonal nature" (p. 42).

Rendón (1994) offers validation as an alternative to student-initiated social and academic engagement, often seen in other models (i.e. Tinto, 1993) to help explain why students remain in college or depart without earning their degrees. Barnett (2011) finds for some groups of students (women and Hispanic students) academic validation in the classroom predicts intent to persist while also predicting a greater sense of integration for all students in her study. A stronger sense of belonging, or the "psychological sense of integration" (Hurtado & Carter, 1997, p. 327), tends to enhance students' intentions to persist (Hausman, Schofield, & Woods, 2007), while validation has been found to predict sense of belonging and mediate perceptions of a negative campus racial climate (Hurtado, Ruiz Alvarado, & Guillermo-Wann, 2015).

This study applied Rendón's (1994) theory of validation to a sample of student veterans enrolled at four-year colleges and universities and found that staff- and faculty- validating actions to be central to models predicting intent to persist for students with a military background. Student veterans who experience more validation also have higher confidence in their academic abilities and therefore are also more likely to intend to persist. In other words, validation and confidence are, indeed, linked for student veterans. The link between validation and academic confidence held for sub-samples of student veterans of color as well as for nontraditional college women – both veteran and those without any connection to the military. Further, validation does, indeed, predict social integration, or sense of belonging, for these groups of students, yet none of the models tested for this study resulted in a statistically

significant path between students' sense of belonging and their intentions to persist at their current institution.

In the case of non-veteran students, this study found a direct link between a measure of validation and intent to persist. However, it was general interpersonal validation instead of academic validation in the classroom that had the greatest salience in explaining variation in students' persistence intentions. Barnett (2011) similarly linked faculty validation and intent to persist but did not consider the impact of interpersonal validating actions by a combination of staff and faculty on students' intentions to persist.

Student veterans contribute to the diversity of undergraduate students. While Rendón (1994) did not specifically target student veterans, this study, in support of the findings from previous studies and reports (Durdella & Kim, 2012; O'Rourke, 2011, VA, 2017b), suggests that student veterans represent a distinct subgroup of nontraditional students. This study showcases the diversity of student veterans, even among a nontraditional students. Student veterans tend to be older, more likely to have children, and more likely to be the first in the families to attend college than their peers without a military background; and they typically offer greater diversity in terms of racial/ethnic identity than both traditional and nontraditional students. Thus, campus diversity certainly benefits when student veterans enroll at colleges and universities, but clearly institutions have work to do to ensure a smoother, more successful path to degree completion for student veterans.

The distinctiveness of student veterans also suggests that theory and conceptual models developed for nontraditional students are appropriate for student veterans. Specifically, Nora's (2003) conceptual model of student engagement guided the selection of variables for this study's analytical models. While the use of such a complex model proved problematic due to issues with

model fitting and convergence, its more inclusive considerations, particularly those related to family and employment responsibilities, provided the space for a more careful, nuanced approach toward understanding persistence intentions among a very diverse group of students.

Environmental "pull" variables and intent to persist. Factors external to an institution, such as employment or family issues, can have a negative influence on nontraditional students' decision to remain in college (Bean & Metzner, 1985; Nora, 2003). Bean and Metzner (1985) posited that these factors were even more important than social and academic integration for nontraditional students. However, O'Rourke (2011) determined that this was not a significant predictor of intent to persist for student veterans at two-year institutions. By contrast, this found environmental pull factors, collectively, to significantly and directly predict the likelihood student veterans intended to persist at their current institution. While these outside influences were quite salient in explaining student veterans' intentions to persist, validation's indirect association with students veterans' intentions to persist as mediated by academic self-concept exerted even more influence than the direct link between environmental pull factors and persistence intentions.

Nora's (2003) model described external forces that pull students away from campus as responsibilities related to work, family, and having to commute to campus. Bean and Metzner (1985) offered a more expansive list that also included finances, outside encouragement, and transfer opportunities. The three external forces operationalized in this study related to family responsibilities, work obligations, and financial concerns, collectively encompassing an admittedly restricted set of possible factors. A more complete accounting of pull factors may have yielded a clearer picture regarding the effects of outside influences on students' intentions to return to an institution. For example, a measure of employment opportunities (e.g., being

offered a new job or a promotion with greater time demands) may have provided some insight as to why highly confident non-veteran students had lower likelihoods of intending to persist; unfortunately, such a measure was not available in the dataset. These students might have opportunities, not captured in the structural equation model, that compete with desire or need to obtain their degree.

Academic self-concept. Perceptions of one's abilities in an academic setting, or academic self-concept (Shavelson & Bolus, 1982) generally corresponds with earning higher grades (Elias & Loomis, 2000; Richardson, Abraham, & Bond, 2012; Zajacova, Lynch, & Espenshade, 2005) and having a greater likelihood of persisting (House, 1992; Tracey & Sedlacek, 1987) for different groups of college students. This study showed that academic self-concept is the most important factor in student veterans' intentions to remain at their respective college or university.

Findings suggest that faculty and staff directly influence the way student veterans see themselves in relation to other students in terms of general academic ability, mathematical ability, confidence in their intellectual ability, and drive to achieve. Through the lens of validation theory (Rendón's, 1994), validating agents have a role in developing students' belief that they are capable learners and belong in academia. They develop a "motivating 'I can do it' attitude" (Rendón Linares & Muñoz, 2011, p. 15). Similarly, students who have higher-quality interactions with faculty tend to feel more positive about their academic abilities (Cokley, 2000; Komarraju, Musulkin, & Bhattacharya, 2010).

Efforts to increase student veterans' intent to persist should be directed towards increasing confidence in their academic abilities while striving to mitigate the negative impact or pull of outside influences. Validation is one mechanism that predicts academic self-concept

while also serving to enhance other important outcomes, including sense of belonging and the development of the traits and behaviors associated with lifelong learning.

Validation and sense of belonging. For both student veterans and their matched non-veteran counterparts, experiencing greater and more frequent validation from faculty and staff corresponded with establishing stronger connections to the institution, which supports previous research (Barnett, 2011; Hurtado et al., 2015). While Barnett (2011) focused solely on faculty validation, Hurtado et al. (2011) included both academic and interpersonal validation and concluded that general interpersonal validation had greater salience in strengthening students' sense of belonging compared to academic validation. Additionally, they determined that both types of validation mitigate the effects of a negative campus climate on students' sense of belonging.

Campus diversity can also factor into the sense that students feel as though they belong on campus. For example, Strayhorn (2008) found that interacting with diverse peers can foster a stronger sense of belonging for Black and White male students. Relatedly, this study underscores the importance of institutions portraying a commitment to diversity through publications, speeches by administrators, celebrations and appreciation of cultural differences, etc. as one of many strategies to strengthen the ties students feel to the campus, especially among student veterans of color. The effect was not found with the full sample of student veterans (White student veterans and student veterans of color). Most likely, White, male student veterans are not as sensitive to expressions of diversity on behalf of an institution as their non-White or female counterparts, which may have constrained my ability to detect the same relationship in the model that included all student veterans.

Validation and habits of mind for lifelong learning. While earning a degree opens doors for students and is critical to earning power over a lifetime (Bowen, 1977; Gutmann, 1999; Mumper, Gladieux, King, & Corrigan, 2016; U.S. Department of Education, 2015; Van der Werf & Sabatier, 2009), the development of habits or traits associated with continued learning are critical for interacting in a complex world (Association of American Colleges and Universities [AAC&U], 2007). The Multicontextual Model for Diverse Learning Environments (MMDLE) provided the foundation for the DLE survey instrument used in this study (Hurtado, Alvarez, Guillermo-Wann, Cuellar, & Arellano, 2012); in the model, habits of mind for lifelong are considered one of three outcomes for a quality education that, together with the other outcomes, has "implications for the promotion of social equity, pluralistic ideals of democratic citizenship, as well as economic outcomes for regions where diverse college graduate reside" (Hurtado et al., 2012, p. 50).

Higher education institutions that cultivate these habits or traits in their students assist in enhancing their capacity to think critically about new problems and adapt to changing environments (AAC&U, 2007). In this way, individuals more frequently practicing such habits typically demonstrate greater preparation for navigating careers and flexibility needed in a changing society. Both student veterans and their nontraditional, non-veteran matched counterparts reported more frequent use of these healthy lifelong learning habits as they perceived greater validation coming from faculty and staff. This finding supports previous research, as Mayhew, Wolniak, and Pascarella (2008) found that faculty actions, via educational practices, can enhance students' likelihood to engage in these crucial habits. Some of these educational practices, reported by students include being encouraged to participate in discussions and having positive interactions with instructors, showing a slight overlap with this study's

measures of habits of mind. Mayhew et al. (2008) also found cross-racial interactions with diverse peers to be critical in developing habits of mind.

Validation and campus climate. In addition to the connection between campus climate and sense of belonging discussed in an earlier section, students' perceptions of campus climate also correlated with their sense of validation. This study's structural models suggest a positive relationship between perceiving a stronger commitment to diversity from the institution and the extent to which students – both veteran and non-veteran – felt validated by faculty and staff. Strong, public statements from the institution emphasizing the value of diversity may help to create the space for more authentic relationships to form between students and faculty. Students may have more trust to engage with staff and faculty. On the other hand, an institution's commitment to diversity may also manifest within its staff and faculty where institutional agents are both knowledgeable about and open to using methods shown to benefit nontraditional students.

Although students' perceptions about an institution's commitment to diversity significantly related to validation, direct and personal experiences with discrimination and bias did not significantly correlate with validation for the full sample of students, or sub-samples of student veterans or their nonveteran counterparts. Among the sub-sample of student veterans, more frequent harassment or threats corresponded with experiencing significantly less frequent validation from their instructors in the classroom. The lack of significance between experiences with discrimination and validation for the larger sample of student veterans and non-veteran students diverges from previous research. For example, Nora and Cabrera (1996) determined that perceptions of and experiences with a negative campus climate, measured by a construct consisting of items related to witnessing or experiencing prejudice or discrimination on campus,

correlated with less favorable experiences with staff and faculty. Hurtado et al. (2015) also determined that a more hostile racial climate, represented by forms of discrimination, predicts lesser validation across both measures of validation used in this study.

Validation and type of institution. While perceptions of institutional diversity had the greatest effect on measures of validation for all groups of students in this study, whether a school was public or private also made an impact. Student veterans attending public schools experienced less validation in the classroom and felt less interpersonal validation than students attending private institutions. This might be a product of the intimacy of classroom size where private schools, in general, have a lower student-to-faculty ratio than public schools (Scott, Bailey, & Kienzi, 2006). Faculty with smaller classes may have more opportunities and energy to interact with and validate individual students than faculty teaching larger size classes. Student-to-faculty ratios also vary within private and public colleges and universities (Volkwein & Sweitzer, 2006), but this study does not control, for example, whether a private school is a research university or a liberal arts college.

Validation and student veteran women. Considering the demographic measures included in the model, the extent to which student veterans felt validated significantly differed only by participants' gender identity, as women student veterans sensed significantly more attentiveness from faculty and staff than their male counterparts. Barnett (2011) found differences between men and women students in terms of their responsive to validation, as women, but not men, who experience higher levels of faculty validation tend to be more likely to intend to persist. It may be that women translate validating messages from faculty and staff as a form of mentorship. Heitzman and Somers (2015) found that student veteran women wanted more mentoring experiences on campus, even relating it back to mentorship they received during

military service. Thus, it is possible that student veteran women may view interpersonal validation as a form of mentorship and therefore may notice it more than their male counterparts when they experience it.

Conceptualizing a model for student veterans' persistence intentions. Given the distinctiveness of the patterns associated with student veterans' persistence intentions identified in this study, I propose a new model that future studies may consider using as a framework when designing studies examining persistence and other college outcomes for student veterans.

First, demographic and background variables such as race, gender, age, and whether a student veteran has children have distinct relationships associated with student veterans' perceptions of and experiences with campus climate, validation, and external influences that typically pull their attention away from their academics. Second, perceptions of campus climate, as measured by student veterans' belief that their institution espouses a commitment to diversity, account for some of the variation in the amount of validation a student veteran experiences as well as their sense of belonging to campus. Factors outside of the immediate control of a college or university, such as employment, family responsibilities, encouragement from family and friends, job and transfer opportunities, and finances also affect the way in which a student with a military background experiences and utilizes validation, yet these considerations can also directly influence student veterans' intention to remain at the institution.

External factors likely affect the extent to which students feel validated for a number of reasons. First, students who face more demanding sets of responsibilities at work or who have families to care for at home typically would be expected to spend less time on campus than their peers without jobs or children, resulting in less overall contact and interaction with the overall campus environment. This reduced time on campus may present an opportunity that allows

faculty to play an outsized role in establishing healthy links between the student veteran and the institution. Second, staff and faculty may notice when students are preoccupied or overwhelmed by outside responsibilities or concerns with financing college and are already reaching out or showing additional concern. Specifically, dissatisfaction with finances may lead to distress with symptoms including trouble concentrating, irritability, and fatigue (Archuleta, Dale, & Spann, 2013).

Third, validation is central to a model predicting intent to persist for student veterans, a nontraditional group of diverse students. Validating actions by staff and faculty can affect a student veteran's GPA, their development of traits and skills for lifelong learning, and, most importantly, confidence in their academic abilities. Fourth, cognitive and noncognitive outcomes, such as GPA and habits of mind did not relate to a student veteran's intention to persist; however, academic confidence significantly and directly related to student veterans' persistence intentions, as more confident students were more likely to intend to re-enroll. Finally, sense of belonging gives an indication of a student veteran's sense of social integration or membership on campus, but this measure does not directly relate to persistence intentions for this sample.

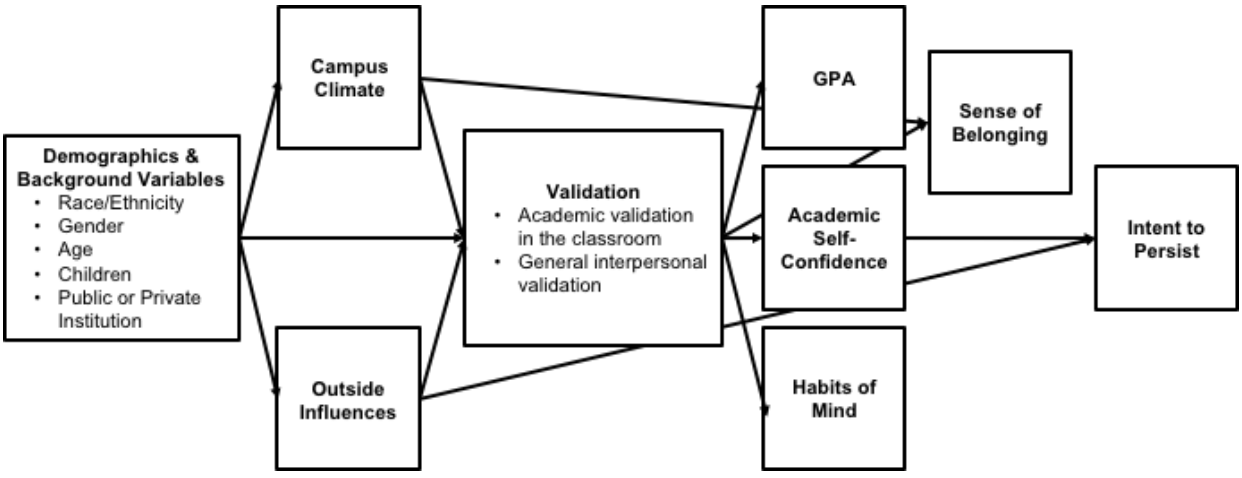

Figure 5.1. Proposed model for student veteran intent to persist based on significant findings and relationships from this study. Central to this model is the theory of validation (Rendón, 1994); student veterans who experience more validation from staff and faculty also

have more confidence in the academic abilities and, in turn, a greater intention to return to their respective college or university.

Implications

Implication for the federal government. The GI Bill is an exemplar of the capability the federal government has to support its veterans. While the Department of Veterans Affairs has well-documented struggles with managing health care for millions of veterans (Slack & Sallah, 2017; Slack & Wagner, 2018), as well as recent personnel problems (Haberman & Fandos, 2018), political turmoil, and leadership instability (Fandos, 2018; Slack & Wagner, 2018), evolutions of the GI Bill have provided veterans with educational benefits since World War II (Cardozier, 1993; Cohen & Kisker, 2010; Thelin, 2011). However, there is much more the government should do to ensure the success of student veterans and this section will focus on two specific ways, tied to this study, in which the federal government can improve its support.

Expand the Transition Assistance Program (TAP). The Transition Assistance Program (TAP) is a collaborative effort between the Department of Defense (DoD), the VA, the Department of Labor, the Department of Education, the Department of Homeland Security, the U.S. Small Business Administration, and the U.S. Office of Personnel Management to ensure the successful transition of retiring or separating servicemembers (Memorandum of Understanding Regarding the Transition Assistance Program for Separating Servicemembers, 2014). Participation in its core curriculum is mandatory and includes transition counseling, financial planning, crosswalk of military skills, employment workshop, and briefings on VA benefits (DoD, 2016). There are also three optional two-day workshops available, including one focused on accessing higher education for servicemembers seeking a college degree (DoD, 2017b; U.S. Government Accountability Office [GAO], 2017). However, the GAO (2017) found that in 2016

less half of separating servicemembers planning to pursue higher education actually attended the workshop.

The government should expand and make mandatory the higher education track for any separating servicemember planning to use their GI Bill education benefits. In a hearing before the Subcommittee on Economic Opportunity of the Committee on Veterans' Affairs, several veterans service organizations and Chairmen Brad Wenstrup (R-OH) expressed a desire to expand and make the higher education track mandatory for servicemembers planning to attend college (A Review of the Transition Assistance Program, 2015). Chairmen Wenstrup further believes that GI Bill benefits should be tied to attendance of this track, citing the enormous financial benefits available for servicemember to attend college.

An expanded, mandatory, program would not only ensure that transitioning servicemembers have the ability to make sound decisions on accessing higher education but also could enhance academic skills and build their confidence in returning to an academic environment; enhancing academic self-concept, a factor this study finds crucial to student veterans' intentions to persist in college. Fortunately, there are existing programs within DoD that could provide the template for an expanded program that extends beyond a relatively short, two-day workshop, when compared to the amount of educational benefits available from the GI Bill.

One example program within DoD that could provide a template is the U.S. Military Academy's (USMA) Student Success Course, which is facilitated by instructors within USMA's Center for Enhanced Performance (CEP) (USMA, 2016). The CEP integrates both academic and performance psychology skills to help cadets develop more effective time management, note taking, concentration, memory, thinking, reading, and test taking skills. The course consists of

20, 55-minute lessons which, throughout the military, could be deployed as a single block or spread out over weeks. Recognizing that not all servicemembers will have the academic background of cadets at West Point, a program of this length that focuses on study skills versus course content may well benefit anyone going into college at any level. Additionally, CEP instructors could provide insight into building such a program, especially in terms of working with college students with a prior military background.

Changes to GI Bill. One concern with the GI Bill is that servicemembers use up significant portions of their GI Bill by taking remediation courses to make up for shortfalls in their academic backgrounds (A Review of the Transition Assistance Program, 2015). This study suggests that student veterans tend to have lower high school grades than students without a military background. Although, lower grades did not prove to be indicative of lower college grades or persistence intentions, institutions might require students to take remedial courses. Unfortunately, the GI Bill has a limit of 36 months, so any time spent on remedial courses or retaking courses creates a difficult gap to overcome. If remediation programs cannot be integrated into the TAP infrastructure, the government should consider adding a provision for student veterans to take remedial courses without penalty to the 36-month limit of their GI Bill benefits. Without this provision or assistance provided prior to separation from the military, student veterans risk wasting these benefits without ever obtaining a degree.

Support to staff and faculty workshops. The previous recommendation to expand the higher education component of TAP is heavily focused on adapting student veteran behaviors and cognitions to fit their new environment. Aligned with validation theory (Rendón, 1994), policymakers might also consider initiatives that focus action on faculty (Hurtado et al., 2011). Congress could direct DoD, the VA, or the Department of Education to establish workshops for

staff and faculty that incorporate considerations from this study and other studies aimed at helping staff and faculty to better understand and support students with military backgrounds. Based on this study, a significant component would focus on enhancing the ability of staff and faculty to provide both academic validation in the classroom and interpersonal validation in or outside of the classroom. While Congress has little control to influence the initiatives and policies implemented at institutions of higher education, it could provide a designation deeming an institution as "veteran friendly" for having a certain percentage of its staff and faculty complete this workshop. A more extreme option would be to prevent the disbursement of funds to institutions not willing to participate in this type of workshop.

Implications for four-year colleges and universities. With or without federal funding for workshops aimed at equipping faculty and staff with the knowledge and skills necessary for educating and connecting with student veterans, colleges and universities should consider allocating resources of their own to enhance the quality of staff and faculty interactions with student veterans. Previous studies have found that student veterans are often frustrated with faculty, yet this frustration has not translated into higher dropout rates. This study suggests that staff and faculty who validate this group of students also make a difference in their intentions to remain at their respective institutions. And this finding applies both to student veterans as well as their non-veteran, nontraditional counterparts.

Most college campuses already provide a variety of services for student veterans (McBain, Kim, Cook, & Snead, 2012). Some of these services include veteran recruitment efforts, financial assistance, and tuition refunds for mobilized National Guard and Reservists, academic support, counseling for mental and physical disabilities, and academic credit for military service. These services, along with the establishment of veteran services offices, have

proliferated since 9/11, but less than half of the campuses have training for faculty and staff focused on understanding student veterans.

Institutional efforts to validate student veterans across campus. Now that this study has clarified the role of validation in the student veterans' experiences in higher education, the usefulness of Rumann and Bondi's (2015) recommendations, which are based on Rendón's (1994) study, for integrating validating actions is clearer. The authors treat student veterans simply as a subset of nontraditional students and recommend specific actions states, institutions, and staff and faculty can take to better engage this groups of students. Instead of relying on a more typical piecemeal approach, Rumann and Bondi (2015) recommend that campuses create an institutional plan that devotes resources and enlists senior leadership in intentional, coordinated efforts to validate students across the campus. Part of this plan could include the recognition of staff and faculty who devote time and energy to validating student veterans. Barnett (2011) makes a similar recommendation for faculty working with nontraditional students without a military background but goes a step further in recommending that validating actions be codified in their official duties. Such recognition is important because the time and energy faculty and staff devote towards validating student veterans competes with other areas in which staff and faculty are evaluated. If they are not recognized, compensated, or held accountable for being validating agents, they might not exert the effort. Ezeonu (2011) highlights the success of assigning staff and faculty as "transitional advisors" (p. 152) who meet with students several times a quarter.

As part of a campus-wide plan, campuses can train their staff and faculty on the unique needs of student veterans and on the importance of validation in their success (Rumann & Bondi, 2015). Rendón (1994) recommends that staff and faculty be given profiles of the demographic

makeup of students on their campuses along with unique difference and potential issues that each group might bring to campus and ways to tackle these issues. For student veterans, some of these issues might include disabilities and mental health issues, disruption from being called to active duty for training or a deployment, and challenges related to transitioning from the military to civilian and university life (Rumann & Bondi, 2015). Rumann and Bondi (2015) further recommend that workshops include training on military culture.

Both staff and faculty should understand their important role in the success of student veterans, as well as other nontraditional students. Incorporating validation theory, as a core concept, into workshops and the curriculum for training staff will help develop awareness and understand helpful ways to engage these students. Rendón (1994) recommends that faculty learn how to validate students not just in their classrooms, but also outside of class. They must learn how to connect with students and remain connected. They must learn how to integrate student experiences and perspectives into the classroom environment, demonstrating inclusion and appreciation for the knowledge and experience these student bring to campus. Rumann and Bondi (2015), however, remind us not to forget that student veterans have multiple identities and cannot be categorized simply as veterans.

When staff and faculty reach out to student veterans, they will begin to learn more than workshops and training can teach. They will learn that student veterans not only come from diverse backgrounds, but their experience within the military has been very diverse as well. For example, a student veteran who had spent six years in the military may have been responsible for the welfare and training of eight other soldiers, as well as a vehicle and equipment worth several millions of dollars and had been deployed to a foreign land and partnered with foreign soldiers. Or they may have been involved in highly technical fields such as surveying and mapping or

served aboard a nuclear submarine as an electronics technician. The point is that veterans bring diverse experiences, responsibilities, and backgrounds that, with their permission, may be incorporated into relevant classroom discussions and drawn upon as sources of knowledge.

As part of a campus-wide initiative, institutions can assess efforts to validate student veterans, or other nontraditional students, using the Diverse Learning Environments (DLE) survey. The DLE survey includes measures of academic and general interpersonal validation developed by Hurtado and colleagues (2011) and extended by this study in its application to student veterans. These measures can also be used to determine how levels of validation affect other outcomes included in this study, such as such as habits of mind for lifelong learning and achievement, or any one of a number of other college outcomes, such as multicultural competencies related to pluralistic orientation and civic engagement, among others (Hurtado et al., 2011; Hurtado & Guillermo-Wann, 2013).

Beyond campus-wide efforts to integrate validation into the culture of the institution, campuses need to gain an awareness of the external factors that may pull student veterans away from campus. Some of these are already being addressed by existing programs and services for student veterans, but an increased effort to bring attention to or even begin to address them may help student veterans remain at their institutions. Along with the many ongoing efforts to integrate student veterans into the social aspects of campus and create social cohesion among military-connected students, this study's findings suggest that campuses may benefit from re-prioritizing strategies aimed at addressing the needs of this subset of students. For example, focusing on childcare opportunities or augmenting on-campus employment opportunities for student veterans might make a substantial difference in helping this group of students

successfully transition to college and in encouraging them to remain enrolled at the institution until they complete their degrees.

Staff and faculty efforts to validate student veterans. Aside from attending workshops and professional development opportunities and focusing on self-improvement, staff and faculty can engage student veterans in validating manner in several ways. Most important, validation is staff and faculty-initiated - "it involves faculty, counselors, coaches, and administrators actively reaching out to students or designing activities that promote active learning and interpersonal growth among students, faculty, and staff" (Rendón, 1994, p. 44). Staff and faculty should not expect student veterans to seek validation, but should make the concerted, ongoing effort, to validate this group of students.

The validation measures used in this study provide the most direct insight into ways that that staff and faculty can provide support to student veterans and make a difference in student veterans' experiences in college. First, and most important, faculty should ensure that student veterans contributions are valued in class. Student veterans should have a sense that their presence and opinions are appreciated. Second, faculty should provide quality feedback on assignments. This may stem from a military culture where capturing and sharing lessons learned after each training event or mission is considered critical. Third, faculty should encourage student veterans to ask questions and participate in discussion. Outside of the classrooms, staff members can validate student veterans by taking an interest their development or recognizing their achievements. Beyond these recommendations, more general ways in which to validate student veterans are provided below.

In terms of creating a validating classroom experience, faculty should create active classroom environments where student veterans feel empowered and have the opportunity to

learn and succeed (Rendón, 1994). This is opposite of the traditional, lecture style presentations where students are simply recipients of their professor's knowledge and recent research supports the effectiveness of active classrooms on student performance over the more traditional approaches (Freeman et al., 2014). One way to create an active classroom is to invert or flip the classroom (Brame, 2013; Strayer, 2012). Brame (2013) outlines four elements of a successful flipped class: 1) students complete readings or watch video presentations prior to class; 2) students are rewarded (i.e., points) for completing assigned preparatory task; 3) faculty receive feedback on student understanding via online quizzes taken prior to class or some other mechanism; 4) classroom activities are focused on deeper understanding and involve in experiments, debates, discussions, or other activities where students are interacting and demonstrating understanding.

In addition to the key elements of a flipped classroom provided by Brame (2013), students should be provided opportunities in class to succeed (Rendón, 1994); faculty can provide opportunities within class for students to write or solve problems and receive immediate feedback so they can experience success prior to completing assignments on their own (Rumann & Bondi, 2015). In such learning environments, student veterans can build confidence in their academic abilities while receiving feedback from faculty. Throughout the classroom experience, faculty and student veterans are interacting frequently, sharing knowledge and experiences with one another (Rendón, 1994).

Instructors should be mindful of family and work responsibilities of different groups of students, including student veterans, when they assign individual or group assignments and ensure enough time is provided for successful completion (Rumann & Bondi, 2013). They should adapt syllabi and assignment deadlines to the needs of current students instead of relying

solely on recycled syllabi. In this study, outside influences, such as work and having children, can affect student veterans' decisions to remain in college. Faculty can counteract this by setting up their classrooms in a way that acknowledge these unique challenges.

Beyond the classroom, both staff and faculty might consider placing special emphasis on building genuine, lasting, relationships with student veterans where they are able to demonstrate concern for their development (Rendón, 1994). While organized activities or celebrations are one way to engage student veterans, staff and faculty should consider reaching out to this group of students regularly (Rumann & Bondi, 2015). They can do this by meeting regularly or engaging student veterans via email. It could be as simple as asking them how they are doing or if they need anything. It could also be achieved by becoming involved in activities or organizations for student veterans. As long as it becomes a regular occurrence, student veterans should begin to feel a genuine concern for their well-being and development. However, staff and faculty should take into consideration that student veterans might have difficulty meeting with them or participating in activities that usually work for other students (Rumann & Bondi, 2015). Offering more flexible times and being mindful of outside commitments will help facilitate the relationship.

Staff and faculty should look to connect student veterans to other student veterans and to organizations or activities on campus (Rendón, 1994; Rumann & Bondi, 2015). Without assistance in connecting, student veterans, may be disinclined or lack the confidence to participate on their own, leading to feelings of isolation or a lack of support. Student affairs practitioners or even knowledgeable faculty can introduce student veterans to similar peers they know or advocates of military-connected students. They can also help connect them to people or organizations they otherwise might not know about including family support groups, academic

clubs, and intramural sporting events. However, some student veterans do just want to genuinely blend in and not necessarily confine their on-campus connections to military-affiliated individuals and groups. Student veterans come from a military culture where directness and candor are appreciated. Staff and faculty should feel comfortable asking student veterans if they would like assistance.

Rendon (1994) offered validation theory as a response to the changing demography of colleges and universities and a challenge to a system built for traditional students. Many of the recommendations offered here are not only applicable for institutions with high numbers of student veterans but also for any institution enrolling a diverse student body. The extension of the theory of validation to the student veteran population adds to the argument that institutions and their staff and faculty should continue adapting to new realities by embracing practices aimed at creating inclusive campuses and classroom environments.

Future Research

Several considerations for future researchers pursuing studies examining the success of student veterans would serve to advance the findings of this study. First, future research should include re-enrollment data to determine what student veterans' actual behavior was and how it aligned with their intentions the previous year. Second, although this study brought forth a diverse sample of student veterans, attempts to disaggregate by race and gender were limited. Future studies could improve on the intersectionality of different identities to better understand how, for example, a Black student veteran experiences college compared to an Asian student veteran.

Third, student veterans' combat status, branch of service, and other variables related to military service should be included in future studies to understand the varying impact of military

service on these individuals' college experiences. Not all veterans served in combat, and combat experiences differ. For example, a veteran may have been deployed to a base in Iraq, which is considered within a theater of combat operations, and provided administrative support, never leaving the confines of the base. Or, they may have had been responsible for finding roadside bombs, where the risk of being inured was considerable. Either scenario is considered combat, but both experiences are clearly different. Combat exposure has shown to be associated with symptoms of post-traumatic stress (PTS) for student veterans, which in turn, has been associated with alcohol abuse, lower grades, and lower expectations to remain in college (Barry, Whiteman, & MacDermid Wadsworth, 2012). Along with proper medical and mental health treatment, supportive and validating staff and faculty may help to counteract the effects of combat.

This study used a variety of HERI constructs that were developed and tested for more general student populations including Academic Self-Concept, Habits of Mind for Lifelong Learning, Sense of Belonging, Harassment, Discrimination and Bias, and Institutional Commitment to Diversity. This study took for granted that these constructs had sufficient validity for a sample of student veterans. Future researchers should consider empirically validating that these latent measures retain their structural properties when applied to samples of student veterans. While this study tested established measures of validation for student veterans, it was beyond the scope of this study to test the other constructs.

While this study used cross-sectional data to examine student veterans' intention to persist, longitudinal studies could tell us more about changes occurring due to the college environment. The challenge would be to gain enough student veterans who provide data at multiple time points to gain enough meaningful data. With enough data, however, longitudinal studies of student veterans in higher education could yield important findings. For example,

pairing the CIRP Freshmen Survey with the College Senior Survey could help to better determine how academic self-concept changes during college among student veterans and the extent to which validation from faculty and staff might account for some of that change.

This study, with its reliance on a theory and conceptual model developed for nontraditional students, should be extended to a sample of student veterans attending community colleges, as research in this area remains limited. Such study requires a large sample of student veterans from numerous two-year colleges and also a clear determination for the reason a student might intend to drop out. From the survey used in this study, I was unable to determine whether students at two-year colleges were intending to depart their institution because they were unsatisfied with their experience or because they wanted to transfer to a four-year college to complete a four-year degree. However, over a third of student veterans attend public, two-year institutions (Cate et al., 2017) and their perception and experiences should be captured. Further, the few studies considering student veterans at two-year institutions would benefit from updated theoretical and conceptual frameworks that consider the diversity of the student veteran population.

Findings from this study also offer qualitative researchers new questions to answer pertaining to student veterans' experiences with staff and faculty. With academic and general interpersonal validation being central to the model predicting intent to persist for students with a military background, survey items need to be further unpacked for this groups of students. More specifically, researchers could determine how students veterans experience validation by asking such questions as: 1) how have faculty empowered you to learn? 2) How were your contributions valued in class? 3) Tell me about a time a staff or faculty member reached out to you. Such

questions will help to understand how student veterans experience validation and could drive the development of new survey items to better capture the underlying constructs of validation.

There remain numerous opportunities to study student veterans, especially as new theoretical and conceptual frameworks designed with students of color or women students emerge. Future researchers must recognize that student veterans are not monolithic but instead vary considerably in terms of race/ethnicity, gender, sexual orientation, socioeconomic class, and combat experience. At minimum, these factors should be properly represented in data and analysis, and, ideally, further examined to determine how intersectionality of different identities interact with the college environment.

Final Thoughts

I began this study because I was dismayed by the number of soldiers I have had the privilege of serving with, who went off to college but never obtained their degrees. My experience is not isolated, as studies indicate a large portion of student veterans leave college prior to graduation. This study attempted to understand, using a theoretical framework and conceptual model developed for nontraditional students, the factors associated with student veterans' intentions to depart or remain at their respective institutions. Students' perceptions of their staff and faculty's attention and concern for their development inside and outside of the classroom, or academic and general interpersonal validation, emerged as the central factors affecting student veterans' intentions to persist, and Rendón's (1994) theory of validation provides a roadmap for stakeholders, including the federal government, college campuses, and staff and faculty, to integrate into policy and practice. Hopefully, this study not only provides actionable evidence highlighting the importance of validation but also serves as a springboard for

future research examining the college experiences and outcomes for student veterans and other nontraditional students.

Appendix A: Variable Definitions and Coding

Variable Definitions and Coding

Factor/Variable	Coding
Dependent Variables	
Intent to persist	0=No; 1=Yes
Independent Latent and Observable Variables	
Pre-college factors and pull factors	
Sex: Female	1= "Male," 2= "Female"
Race: Student of Color	0="White," 1= "Student of Color"
Age	10-point scale: 1= "16 and under" to 10="55 or older"
High school GPA	8-point scale: 1= "D" to 4="A"
First generation: Yes	0= "No," 1="Yes"
Veteran: Yes	0= "No," 1="Yes"
Enrollment Status	0="Part-time, 1="Full-time"
Institutional Control	0="Private," 1="Public"
Concern about ability to finance college education	1="None," 2="Some," 3="Major"
Missed class for personal/family responsibilities	1="Not at all," 2="Occasionally," 3="Frequently"
Missed class for employment	1="Not at all," 2="Occasionally," 3="Frequently"
Children	0="No," 1="Yes"
Academic and Social Experiences	
Campus Climate	
Discrimination and bias (DLE factor)	8-item factor scale (see Appendix B)
Harassment (DLE factor)	7-item factor scale (see Appendix B)
Institutional commitment to diversity (DLE factor)	5-item factor scale (see Appendix B)
Academic validation in the classroom (hypothesized factor)	Hypothesized 4-item factor scale (see Appendix B)
General interpersonal validation (hypothesized factor)	Hypothesized 6-item factor scale (see Appendix B)
Not been able to get into the classes you need because they were full	1="Not at all," 2="Occasionally," 3="Frequently"
Cognitive and Non-Cognitive Outcomes	
College GPA	4-point scale: 1= "D" to 4="A"
Academic self-concept (DLE factor)	4-item factor scale (see Appendix B)
Habits of mind for lifelong learning (DLE factor)	11-item factor scale (see Appendix B)
Final Commitments	
Degree aspirations	1="None or Vocational Cert.," 2="Associate," 3="Bachelors," 4="Master's degree," 5="Ph.D., M.D., J.D, etc."
Sense of belonging (DLE factor)	4-item factor scale (see Appendix B)

Appendix B: Items, Definitions, and Coding of Factor Scales

Appendix B

Items Constituting Hypothesized Factor Scales and HERI/DLE Constructed Factor Scales

Factor and Factor Items	Factor Definition and Coding
Hypothesized Academic Validation in the Classroom	**Measures the extents to which student views of faculty actions in class reflect concern for their academic success**
Faculty were able to determine my level of understanding of the course material	1="Never," 2="Seldom," 3="Sometimes," 4="Often," 5="Very Often"
Felt that faculty provided me with feedback that helped me assess my progress in class	1="Never," 2="Seldom," 3="Sometimes," 4="Often," 5="Very Often"
Felt that my contributions were valued in class	1="Never," 2="Seldom," 3="Sometimes," 4="Often," 5="Very Often"
Felt that faculty encouraged me to ask questions and participate in discussions	1="Never," 2="Seldom," 3="Sometimes," 4="Often," 5="Very Often"
Hypothesized General Interpersonal Validation	**A unified measure of students' view of faculty and staff's attention to their development**
At least one faculty member has taken an interest in my development	1="Strongly disagree," 2="Disagree," 3="Agree," 4="Strongly Agree"
Faculty believe in my potential to succeed academically	1="Strongly disagree," 2="Disagree," 3="Agree," 4="Strongly Agree"
At least one staff member has taken an interest in my development	1="Strongly disagree," 2="Disagree," 3="Agree," 4="Strongly Agree"
Staff recognize my achievements	1="Strongly disagree," 2="Disagree," 3="Agree," 4="Strongly Agree"
Faculty empower me to learn here	1="Strongly disagree," 2="Disagree," 3="Agree," 4="Strongly Agree"
Staff encourage me to get involved in campus activities	1="Strongly disagree," 2="Disagree," 3="Agree," 4="Strongly Agree"
Academic Self-Concept	**A unified measure of students' beliefs about their abilities and confidence in academic environments**
Academic ability	1="Lowest 10%," 2="Below Average," 3="Average," 4="Above Average," 5="Highest 10%"
Drive to achieve	1="Lowest 10%," 2="Below Average," 3="Average," 4="Above Average," 5="Highest 10%"
Mathematical ability	1="Lowest 10%," 2="Below Average," 3="Average," 4="Above Average," 5="Highest 10%"
Self-confidence (intellectual)	1="Lowest 10%," 2="Below Average," 3="Average," 4="Above Average," 5="Highest 10%"
Habits of Mind for Lifelong Learning	**A unified measure of the behaviors and traits associated with academic success**
Ask questions in class	1="Not at all," 2="Occasionally," 3="Frequently"
Support your opinions with a logical argument	1="Not at all," 2="Occasionally," 3="Frequently"
Seek solutions to problems and explain them to others	1="Not at all," 2="Occasionally," 3="Frequently"
Revise your papers to improve your writing	1="Not at all," 2="Occasionally," 3="Frequently"
Evaluate the quality or reliability of information you received	1="Not at all," 2="Occasionally," 3="Frequently"
Take a risk because you feel you have more to gain	1="Not at all," 2="Occasionally," 3="Frequently"
Seek alternative solutions to a problem	1="Not at all," 2="Occasionally," 3="Frequently"

Look up scientific research articles and resources	1="Not at all," 2="Occasionally," 3="Frequently"
Explore topics of your own, even though it was not required for a class	1="Not at all," 2="Occasionally," 3="Frequently"
Accept mistakes as part of the learning process	1="Not at all," 2="Occasionally," 3="Frequently"
Seek feedback on your academic work	1="Not at all," 2="Occasionally," 3="Frequently"
Sense of Belonging	**Measures the extent to which students feel a sense of academic and social integration on campus**
I feel a sense of belonging to this campus	1="Strongly disagree," 2="Disagree," 3="Agree," 4="Strongly Agree"
I feel that I am a member of this college	1="Strongly disagree," 2="Disagree," 3="Agree," 4="Strongly Agree"
I see myself as a part of the campus community	1="Strongly disagree," 2="Disagree," 3="Agree," 4="Strongly Agree"
If asked, I would recommend this college to others	1="Strongly disagree," 2="Disagree," 3="Agree," 4="Strongly Agree"
Harassment	**Measures the frequency that students experience threats or harassment**
Physical assaults or injuries	1="Never," 2="Seldom," 3="Sometimes," 4="Often," 5="Very Often"
Threats of physical violence	1="Never," 2="Seldom," 3="Sometimes," 4="Often," 5="Very Often"
Anonymous phone calls	1="Never," 2="Seldom," 3="Sometimes," 4="Often," 5="Very Often"
Damage to personal property	1="Never," 2="Seldom," 3="Sometimes," 4="Often," 5="Very Often"
Reported an incident of sexual harassment to a campus authority	1="Never," 2="Seldom," 3="Sometimes," 4="Often," 5="Very Often"
Reported an incident of discrimination to a campus authority	1="Never," 2="Seldom," 3="Sometimes," 4="Often," 5="Very Often"
Experienced sexual harassment	1="Never," 2="Seldom," 3="Sometimes," 4="Often," 5="Very Often"
Discrimination and Bias	**Measures the frequency of students' experiences with more subtle forms of discrimination**
Verbal comments	1="Never," 2="Seldom," 3="Sometimes," 4="Often," 5="Very Often"
Witnessed discrimination	1="Never," 2="Seldom," 3="Sometimes," 4="Often," 5="Very Often"
Written comments (e.g., emails, texts, writing on walls)	1="Never," 2="Seldom," 3="Sometimes," 4="Often," 5="Very Often"
Heard insensitive or disparaging remarks from faculty	1="Never," 2="Seldom," 3="Sometimes," 4="Often," 5="Very Often"
Heard insensitive or disparaging remarks from students	1="Never," 2="Seldom," 3="Sometimes," 4="Often," 5="Very Often"
Exclusion (e.g., from gatherings, events)	1="Never," 2="Seldom," 3="Sometimes," 4="Often," 5="Very Often"
Heard insensitive or disparaging remarks from staff	1="Never," 2="Seldom," 3="Sometimes," 4="Often," 5="Very Often"
Offensive visual images or items	1="Never," 2="Seldom," 3="Sometimes," 4="Often," 5="Very Often"
Institutional Commitment to Diversity	**Measure of a student's perception of the campus' commitment to diversity**
Promotes the appreciation of cultural difference	1="Strongly disagree," 2="Disagree," 3="Agree," 4="Strongly Agree"
Has a long-standing commitment to diversity	1="Strongly disagree," 2="Disagree," 3="Agree," 4="Strongly Agree"

Accurately reflects the diversity of the student body in publications (e.g., brochures, website)	1="Strongly disagree," 2="Disagree," 3="Agree," 4="Strongly Agree"
Appreciates differences in sexual orientation	1="Strongly disagree," 2="Disagree," 3="Agree," 4="Strongly Agree"
Has campus administrators who regularly speak about the value of diversity	1="Strongly disagree," 2="Disagree," 3="Agree," 4="Strongly Agree"

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