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Persistence and Achievement in Academics

Robert L. Altman

PERSISTENCE AND ACHIEVEMENT IN ACADEMICS

by

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(Under the Direction of Janie H. Wilson)

ABSTRACT

One of the most valuable commodities in modern society is a college education. According to the National Center for Education Statistics (NCES, 2016), an estimated 20.5 million students enrolled in American colleges and universities during the fall of 2016, with the majority enrolled in undergraduate programs. When assessing undergraduate success, many studies focus on academic achievement, with grade-point average (GPA) serving as the most common measure. Other studies utilize persistence to graduation as the primary measure of success. Based on the available literature, college success can be predicted by several domains, including personality, motivational influences, and social variables. In the present study, the relationships between both measures of student success and measures from all three domains were examined among undergraduate students (N = 141). Linear regression was used to predict achievement and persistence. Results indicated that motivational factors were the best predictors of actual GPA (R^2 = .14), social factors best predicted self-reported GPA (R^2 = .17), and personality factors best predicted intention to withdraw from school (R^2 = .26). Attempts to predict likelihood to earn a degree were marginally successful, but motivational factors explained only 6% of the variance at best. Results indicated that higher student achievement (i.e., actual GPA) was predicted by greater need for achievement, less fear of failure, and not perceiving schools as being subjective in their treatment of high-achieving students.

INDEX WORDS: Academics, Achievement, Persistence, Social, Personality, Motivation, Retention

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DEDICATION

This manuscript is dedicated to my parents, Clifford and Lynn Altman, who have always encouraged my pursuit of educational achievements and supported me as I learned to persist. Thank you.

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TABLE OF CONTENTS

Page

INTRODUCTION

Undoubtedly, one of the most valuable commodities in modern society is a college education. According to the National Center for Education Statistics (NCES, 2016), an estimated 20.5 million students enrolled in American colleges and universities during the fall of 2016, with the majority enrolled in undergraduate programs. Of these students, an estimated 11.7 million were female, and 8.8 million were male. According to NCES (2016) data from 2014, an estimated 12 million college students were under the age of 25, and an estimated 8.2 million students were over 25 years old. Although students of all ethnicities pursue degrees at American institutions, the number of enrolled Black and Hispanic students is increasing, with respective increases of 2.8% and 6.6% between 2000 and 2014 (NCES, 2016). Furthermore, it is expected that the 2016-2017 school year will see American colleges and universities award approximately 1 million associate's degrees and 1.9 million bachelor's degrees; 798,000 master's degrees; and 181,000 doctoral degrees (NCES, 2016). Clearly, the importance of a college education in today's society cannot be understated.

CHAPTER ONE

PREDICTORS OF PERSISTENCE TO GRADUATION

Retention

Much of the research conducted on the topic of college education has focused on the concept of student retention, also commonly referred to as "persistence to graduation" in the literature. Student retention can be defined as the institutional characteristic which ensures that students persist in their studies until graduation at a single institution. Allen, Robbins, Casillas, and Oh (2008) reported national first- to second-year retention rates at four-year institutions to be 74% on average and 6-year graduation rates to be 53% on average. Departure from an institution, due to transfer or dropping out, has a negative impact on student retention from the perspective of an institution. In fact, transferring may decrease the likelihood that students will complete their degree (Allen et al., 2008).

Institutional Retention Efforts

In order to increase persistence, many institutions have devoted funding to retention-focused programs such as First-Year Experience (FYE) seminars (Allen et al., 2008). While the history of freshman seminar courses date back to 1882, the University of South Carolina implemented the first first-year seminar course meant to address the academic and transitional needs of incoming students and support retention in 1972 (University 101, 2016). These first-year experience programs offer the support needed by many first-year college students to persist (Dadgar, Nodine, Bracco, Venezia, 2014). First-year experience programs vary per institution, and most research on FYE programs focuses on the individual campuses rather than postsecondary education as a whole; as a result, assessment of FYE programs and their outcomes

is varied and inconsistent (Bers & Younger, 2014). The typical components of an FYE program may include first-year seminar courses, learning communities, orientation sessions, early-alert systems, academic advising, and student-engagement initiatives (Bers & Younger, 2014).

FYE program components are generally successful. Research indicates a positive relationship between first-year seminar courses and persistence to graduation and credit accumulation (Cho & Karp, 2012; Miller, Janz, & Chen, 2007; Stupka, 1993). For example, early alert systems are instrumental for increasing retention among students at risk of failing (Price, 2010). Additionally, academic advising is most effective when paired with other FYE program components (Bers & Younger, 2014) and can have a positive effect on both term-to-term persistence and persistence to graduation (South Texas College, 2006). Interestingly, data collected from community colleges (Research Overview, Community College Research Center, 2013) shows that FYE benefits dissipate over the subsequent years and indicates the need for academic support services beyond the first year in order to sustain the positive impact of FYE courses on persistence to graduation. These studies indicate that if students undergo advising or participate in FYE seminars, they are more likely to continue their college education.

Social Influences

The second primary predictor of student retention, the social environment, is powerful. A sense of community, developed through positive interactions with other members of the college community, promotes adjustment to the demands of college (Morrow & Ackermann, 2012). Tinto (1987) highlighted the utility of college subcultures and student-faculty interaction in reducing student departure from college. It has been noted that greater integration with the campus community is essential to academic success. In fact, living on campus dramatically increases the odds of a student persisting to graduation and aspiring to graduate study (Astin,

1984). Turner (2016) noted that integrating male first-year students into the social framework of college is a key step in encouraging persistence. As examples, intramural sports teams, fraternities, and learning communities encourage a sense of belonging (Turner, 2016). This is needed because societal values surrounding masculinity emphasize "strength and power" instead of academics (Scott, Havice, Livingston, & Cawthon, 2012) and as a result, male first-year students often drop out of college without completing a degree at higher rates than females (Sander, 2013).

Perhaps, the campus social influences which most support persistence in college involve faculty members. Both Morrow and Ackermann (2012) and Hoffman (2014) reported that student interactions with faculty increased persistence. Likewise, Turner (2016) noted that positive student-faculty relationships are more likely to foster persistence and that the absence of a positive relationship between teachers and students have the opposite effect: students are more likely to drop out. Similarly, Astin (1984) noted that university honors programs enhance student-faculty interactions while encouraging students to pursue graduate/professional degrees. The effect of positive interactions with faculty are increased ambition and drive to succeed. However, communities external to the university may have both positive and negative effects on student retention.

Across social situations, families remain one of our strongest influences. Family encouragement has been noted to be a major source of emotional support when earning a degree (Lord, Bjerregaard, & Hartman, 2013). External communities, such as family and friends back home, exert an influence on student persistence. Bean's (1982) model of student retention indicated that support from family and friends acts to reduce the likelihood of a student dropping out of college.

Overall, academic institutions have learned that retention can be enhanced by (1) instituting first-year experience programs to build academic competence, (2) fostering devotion to the school through social integration, and (3) encouraging a positive social environment, including student interactions with professors, and family and friends back home. Several additional predictors of retention reside with the student. Such variables include student demographics, personality factors, and motivations.

Demographics

Tinto (1987) reported that few student demographics directly relate to persistence to graduation. However, two key demographics that are indeed related to retention are family history of college attendance and financial resources. Soria and Stebleton (2012) studied first-generation college students and found they are less likely to persist to graduation compared to their peers. First-generation students typically have both lower course grades and SAT scores, exhibit lower levels of academic engagement, exhibit less integration of course material, and have less confidence in their studies (Soria & Stebleton, 2012). According to Pike and Kuh (2005), first-generation students make less progress in both learning and intellectual development than their peers. Having at least one parent who attended college has been documented as having a positive effect on persistence and is believed to aid in navigating the various challenges of college (e.g. seeking financial aid, managing expectations, etc.) and thus increasing persistence (Lord, Bjerregaard, & Hartman, 2013). Lower confidence and less academic engagement may lead first-generation college students to leave college without seeking help.

Perhaps related to first-generation college attendance, a second chief factor affecting student persistence is affordability. Bean's (1982) work with student attrition led to the

development of a model which included financial resources as a predictor of retention. Bean's (1982) model indicated that greater freedom from financial constraints would have a positive impact on student persistence to graduate.

Age is a key factor in persistence for its relationship to family commitments. Traditionally aged students, who range in age from 18-24, are more likely to persist due to fewer work and family constraints (Lord, Bjerregaard, & Hartman, 2013). Nontraditionally aged students, those who are above the age of 24, are more likely to encounter these commitments and are less capable of social integration with their classmates, making them less likely to persist to degree completion (Lord, Bjerregaard, & Hartman, 2013).

The effect of race on persistence has been documented across studies, but remains inconsistent (Lord, Bjerregaard, & Hartman, 2013). Higher graduation rates among White and Asian students have been documented, than among Hispanic and Black students (Lord, Bjerregaard, & Hartman, 2013). Hypothetically, prejudice/discrimination, socioeconomic factors, campus racial climate, and differing levels of support from family and friends are believed to be responsible for this inconsistency (Lord, Bjerregaard, & Hartman, 2013).

According to previous research first-generation college students and those with less financial resources are less likely to earn a degree. Thus, the students most likely to succeed should be free of financial worries and come from a home where both parents attended college.

Personality Factors

In addition to social contextual variables influencing retention; factors within the student play a role. For example, Tinto (1987) notes that the intrinsic need to develop autonomy and competence is positively related to persistence to graduate. Competence is a word many people

associate with the Big Five trait, Conscientiousness. Taylor, Scepansky, Lounsbury, and Gibson (2010) noted that conscientiousness was negatively correlated with an intention of withdrawing from college in a sample of female, first-year students.

Similar to competence, hardiness relates to retention and is defined by the concepts of commitment, control, and challenge (Maddi et al., 2002; Sheard, 2009). Sheard and Golby (2007) explored hardiness as both "a pathway to resilience under stress" and an indicator of retention (Sheard & Golby, 2007). According to Lord, Bjerregaard, and Hartman (2013), commitment to one's educational institution and educational goals are two of the strongest predictors of persistence to graduation. Clearly, the ability to confront challenging circumstances and remain resilient and independent is a contributing factor when pursuing a college degree.

Research on persistence and personality variables indicates that students high in conscientiousness and hardiness would be most likely to succeed in the goal of completing their studies.

Extrinsic Motivation

Although values intrinsic to the student play a role in persistence to graduation, extrinsic motivators certainly also play an important role. Tinto (1987) noted that the higher career and educational aspirations students held, the more likely they would persist to degree completion. Tinto (1987) implies that extrinsic motivation is more likely to aid in degree completion than intrinsic motivation, which is more conducive to the goal of learning and more likely to result in departure should an educational experience at a particular institution not meet a student's standards. Vallerand and Bissonnette (1992) noted that intrinsic motivation combines with extrinsic motivation to further encourage the completion of academic courses.

In relation to persistence to graduation, the goal of obtaining a high-paying job post-graduation is more motivating to degree completion than fostering a sense of belonging with peers (Morrow & Ackermann, 2012). Employment is much easier to obtain with a degree, as 73.5% of 25- to 34-year olds with a bachelor's degree had full-time jobs in 2013 (NCES, 2016). According to survey data, in 2015, fewer college graduates were unemployed than their less-educated counterparts (NCES, 2016). The median earnings of a person with a bachelor's degree is also higher than that of a high-school graduate, and earnings continue to increase with further education (NCES, 2016). Despite differing opinions on the true value of a college education, modern society seems to have commonly accepted it as a necessity for those seeking a better standard of living, and this acceptance has led extrinsic motivation to be the assumed predictor of college success.

CHAPTER TWO

PREDICTORS OF ACADEMIC ACHIEVEMENT

Retention is defined by students continuing their educational commitment, but strong performance during college is also valued as an indicator of learning. In fact, many future goals (e.g., graduate school) require strong academic performance in college courses. Academic achievement is typically measured by outcomes such as individual course grades and overall grade-point average (GPA), and academic success occurs when students perform well in their courses, as noted by a high GPA. According to a meta-analysis by Kuncel, Credé, and Thomas (2005), self-reported GPA generally correlates with actual GPA among high performing students, but the relationship is weaker for underperforming students.

Institutional Academic Support Services

In order to ensure student success, most colleges and universities are establishing student support services such as first-year experience programs and academic tutorial centers which not only ensure retention, as discussed earlier, but also boost academic performance. These services could benefit all students academically, but low socio-economic status (SES) and first-generation students tend to underutilize services unless they are mandatory (Cox, 2009; Karp, O'Gara, & Hughes, 2008). Wahlstrom (1993) noted that FYE seminar participants at community colleges earned higher cumulative GPAs than non-FYE seminar participants. Researchers at South Texas College (2006) noted increased course completion with passing grades by students who underwent academic advising. Turner (2016) noted the importance of learning communities for teaching effective study skills in order to promote academic success among male first-year

students. Overall, it seems that increased participation in FYE seminars and use of academic support services promote greater academic achievement amongst undergraduate students.

Social Influences

A wide range of social factors affect a student's ability to perform well in their courses. Perhaps the most immediate and relevant of these factors are the relationships that exist between students, their peers, and their instructors. Pursuit of educational goals while also seeking acceptance from peers is negatively correlated with GPA, especially amongst males, while desiring a positive relationship with faculty is positively correlated with GPA (Guiffrida, Lynch, Wall, & Abel, 2013). This effect may be due to the fact that those students who attend college, with the goal of relating to peers, do so at the expense of their academics (Guiffrida, Lynch, Wall, & Abel, 2013).

Hoffman (2014) found that classroom interactions between faculty and students are more meaningful to the academic context than interactions outside of the classroom. Student-faculty interactions benefit students by positively impacting motivation and academic success (Hoffman, 2014). Furthermore, instructor-student relationships are powerful influences on classroom engagement, class participation, and lesson comprehension, all of which influence academic success (Turner, 2016). Wilson, Ryan, and Pugh (2010) examined the concept of professor-student rapport in relation to motivation, perceptions of learning, and self-reported grades using the Professor-Student Rapport Scale (PSRS). Rapport is defined as a "close or sympathetic relationship; agreement; harmony" (Wilson, Ryan, & Pugh, 2010) and is comparable to an expanded form of immediacy, which is defined as "psychological availability and warmth" (Wilson & Locker, 2009). The two constructs correlate positively with and predict academic outcomes (Wilson, Ryan, & Pugh, 2010). Further research with the PSRS demonstrated a

negative relationship between verbal aggressiveness and rapport (Ryan, Wilson, & Pugh, 2011). Wilson and Ryan (2013) reported a positive relationship between end-of-semester grades and rapport, eliminating the bias inherent in self-reported grades. These studies provide a firm foundation for the assertion that professor-student rapport has a profound effect on college students' academic success.

One of the most enduring theories to address the topic of academic achievement is Astin's (1984) theory of student involvement, which defines involvement as "the quantity and quality of physical and psychological energy the student invests in the college experience." This is to say that involvement can be measured using both qualitative and quantitative measures and occurs on a continuum, with a student's learning and personal developmental outcomes being directly proportional their involvement (Astin, 1984). Drawing on social factors, Astin (1993) notes that those students who are more integrated through living on campus, being enrolled as a full-time student, and having close associations with both peers and faculty members display the greatest likelihood of making gains in cognitive skills, values, and attitudes.

A summary of previous findings on the effects of socialization on undergraduate academic success finds that more positive relationships with faculty than with peers is indicative of academic success, while maintaining positive relationships with both faculty and peers, living on campus, and being enrolled full-time is even more beneficial.

Demographics

Demographics also play a role in determining academic achievement among college students, including gender and ethnicity. Regarding gender, Luzzo (1994) noted that female college students display greater commitment to their work than male college students in

employment settings. Furthermore, male students typically run a greater risk of earning a low GPA, while female students may earn higher grades if unencumbered by family, work, or finances (Lord, Bjerregaard, & Hartman, 2013).

MacPhee, Farro, and Canetto (2013) conducted a longitudinal study on the performance of underrepresented demographic groups in STEM fields who participated in the McNair Scholars Program. Pretests indicated that women initially displayed lower academic self-efficacy than their male peers, despite similar academic outcomes (MacPhee, Farro, & Canetto, 2013). Upon completion of the program, women reported self-efficacy levels equal to the program's male participants (MacPhee, Farro, & Canetto, 2013). Participants who had a "double-disadvantage," (a combination of: female, a racial minority, or low SES) displayed significantly lower academic self-efficacy, test scores, and academic outcomes (GRE Scores & cumulative GPA) than their "single-disadvantage" counterparts (MacPhee, Farro, & Canetto, 2013). These "doubly-disadvantaged" students displayed more gains in critical thinking and self-perceived creativity than their peers by the time of program completion (MacPhee, Farro, & Canetto, 2013).

Personality and Individual Differences

Additional variables inherent to the individual student can help to explain variability in academic performance. The Big Five factors of Extraversion, Conscientiousness, and Openness to experience are relevant to academic achievement (De Raad, 1996; De Raad, and Schouwenberg, 1996). Levels of Extraversion appear to differ in their effect on performance based on task specifics; timed tasks favor extraverts, whereas non-timed tasks favor introverts (Chamorro-Premuzic, & Furnham, 2003). Research indicates that this trend continues into the classroom, where seminar courses favor extraverts, and lecture courses favor introverts

(Furnham, Chamorro-Premuzic, & McDougall, 2003). Regardless, extraverts are more likely than introverts to fail courses due to their tendency to be distractible, sociable, and impulsive (Chamorro-Premuzic, & Furnham, 2003). Low Neuroticism may also aid in academic achievement as it aids in maintenance of stress and anxiety (Chamorro-Premuzic, & Furnham, 2003). High Neuroticism is closely related to increased absences from class (Furnham, Chamorro-Premuzic, & McDougall, 2003). Evidence also exists for the positive impact of Agreeableness on academic performance (Farsides, & Woodfield, 2003).

Conscientiousness appears to be the Big Five trait most closely related to academic performance as studies have illustrated conscientiousness-based differences in work performance and its close relation to motivation (Chamorro-Premuzic, & Furnham, 2003; Furnham, Chamorro-Premuzic, & McDougall, 2003). Openness is modestly related to academic performance at best (Chamorro-Premuzic, & Furnham, 2003; Farsides, & Woodfield, 2003; Furnham, Chamorro-Premuzic, & McDougall, 2003).

Commitment is another concept which may act as a moderating variable in the complex interactions between student characteristics, behaviors, and outcomes. The construct of commitment itself is "multifaceted" (Le & Agnew, 2003) and difficult to define; with each study, a new definition seems to present itself. Broadly defined, commitment is a force which binds individuals to particular courses of action (Lin & Hwang, 2014). Approaching the topic of organizational commitment, Lin and Hwang (2014) present the concept as multidimensional, on the basis of being what individuals want, need, and ought to do. While studies on commitment originally focused on interpersonal relationships, scholars have noted that the concept itself can be adapted to other areas, such as careers and schooling (Le & Agnew, 2003). Colarelli and Bishop (1990) noted that commitment to a career is reflected by an individual's persistent pursuit

of career goals despite adversity. In a 1994 study, Luzzo noted that those who report higher levels of commitment to a job view their chosen profession more favorably. These definitions and studies provide a framework for how commitment can influence academic success.

Commitment occurs as a cost-benefits analysis (Le & Agnew, 2003), making the need for explicit statement of benefits necessary to encourage successful academic outcomes. A 1988 study by Kluger and Koslowsky used a modified form of Rusbult and Farrell's (1983) commitment questionnaire to predict final grades among university students. Utilizing Rusbult's (1983) investment model of commitment as a guide, the results indicated that if students perceived greater benefits from their studies, this aided student achievement; students who perceived more costs from their studies saw their likelihood of high achievement undermined by commitment deficits (Kluger & Koslowsky, 1988). Further analyses suggested that commitment to a single subject does not predict commitment to another subject and therefore achievement in one area does not predict achievement in another, unrelated area (Kluger & Koslowsky, 1988).

Human-Vogel and Rabe (2015) examined the role of commitment in academic achievement. The study used a modified form of Rusbult, Martz, and Agnew's (1998) investment model of commitment, called the Academic Commitment Scale, to predict a student's overall level of commitment using satisfaction with studies and a clear and steady sense of self, as indicated by a level of self-differentiation (Human-Vogel & Rabe, 2015). Results indicated that resources/finances can be considered personal barriers to achievement which are independent of commitment to academics and that level of commitment is reflective of goal commitment (Human-Vogel & Rabe, 2015). It seems that commitment can be best described as a cost-benefits analysis which instrumentally promotes both satisfaction and success in a specific academic pursuit.

Resilience can also be used as a significant predictor of academic success (Kotzé & Kleynhans, 2013). Resilience is an important factor in dynamic environments like college, because it reduces burnout through coping mechanisms (Kotzé & Kleynhans, 2013). The results of a study by Kotzé and Kleynhans (2013) indicated that resilience correlates positively with academic success. Sheard (2009) has noted that hardiness, which is similar to resilience, aids stress management in first-year students. According to Sheard (2009), highly conscientious individuals, and thus high-achieving individuals, are typically intellectually curious, achievement-oriented, hardworking, and persevering. The author attempted to delineate the relevance of hardiness subcomponents in relation to academic success. Sheard (2009) noted that high levels of hardiness and its commitment component are more likely to promote industriousness and an increased inclination to devote more time and attention to academic pursuits in students. Furthermore, high levels of control should be more likely to result in better management of time and resources, while high levels of challenge can provide an optimistic viewpoint when encountering academic challenges (Sheard, 2009). Sheard's (2009) results indicated that hardiness's commitment aspect is positively related to GPA. These findings indicate that conscientiousness and resilience are prime indicators of the ability to succeed academically.

Sheard and Golby (2007) measured hardiness among college students and found evidence that students' commitment correlated with academic achievement. They operationalized GPA as a measure of student success and noted that older and female students outperform younger and male students, respectively (Sheard & Golby, 2007). According to the results, female participants scored higher than male participants on the commitment subscale of the Personal Views Survey III-R, which is used to assess hardiness and its aspects (Sheard & Golby). Total hardiness scores

did not correlate with participant age. Commitment was the only hardiness component found to be significantly correlated with academic achievement (Sheard & Golby, 2007). However, the strength of the relationship between these two variables was modest (Sheard & Golby, 2007). Curiously, the component of challenge is negatively correlated with academic success (Sheard, 2009). Despite demographic differences, hardiness and commitment continue to emerge as indicators of student success, whereas the desire to seek new challenges does not.

The related concept of self-efficacy, which can be defined as a need for competency (Tinto, 1987), plays a role in academic success. Albert Bandura (1977, 1982, 1997) defined self-efficacy as "the levels of confidence individuals have in their ability to execute courses of action or attain specific performance outcomes" (Lane & Lane, 2001). When utilizing goals to achieve, self-efficacy is highly motivating (Chemers, Li-tze, and Garcia, 2001). In the past, it has been linked to both persistence (Høigaard, Kovač, and Øverby, 2015; Chemers, Li-tze, and Garcia, 2001) and educational achievement (Chemers, Li-tze, and Garcia, 2001).

Results of a study by Chemers, Li-tze, and Garcia (2001) indicated that self-efficacy and optimism are both correlated with academic performance. Lane and Lane (2001) used the self-efficacy questionnaire to examine the relationship between self-efficacy and academic success. Results indicated that possessing enough confidence to cope with the program's intellectual demands was the only factor to significantly predict academic success (Lane & Lane, 2001). While research indicates that high self-efficacy is related to high performance outcomes, the strength of the relationship is inconsistent between studies (Lane & Lane, 2001).

More recently, Høigaard, Kovač, Øverby, and Haugen (2015) noted that self-efficacy is influenced by both environmental and behavioral factors such as a school's psychological climate. Task-oriented climates promote greater self-efficacy and academic achievement in

comparison to ability-oriented climates (Høigaard et al., 2015). Such results illustrate how objective assessment for all, rather than special treatment for some, does more to boost the confidence of a school's student body. Taken together, these results indicate that confidence, supported by optimism and positive reinforcement from an objective atmosphere, can promote student achievement.

In conclusion, the list of personality factors which influence academic success is broad, but several key concepts emerge. Of the Big Five factors; levels of openness, conscientiousness, and neuroticism may contribute to academic success most visibly. High resilience, commitment, and self-efficacy should also correlate with academic success. Resilience and commitment can serve as proxy variables for hardiness.

Motivators

In educational research, the concept of achievement motivation, which is the tendency to pursue success and its benefits and to avoid failure and its negative effects, is a key concept related to academic outcomes (Busato, Prins, Elshout, & Hamaker, 2000). Elliot and Murayama (2008) utilized these motivations to predict exam performance among undergraduate students. Their results indicated that motivation to perform better than peers (need for achievement) was predicative of performing well on an exam, whereas motivation to avoid doing worse than peers (fear of failure) was negatively related to exam performance (Elliot and Murayama, 2008).

CHAPTER THREE

INTEGRATING PERSISTENCE AND ACHIEVEMENT

Many studies focus exclusively on either persistence to graduation or academic achievement as an outcome. The most common measure used for academic achievement is grade-point average (GPA), and the most common measure of persistence is typically whether or not students graduate (Robbins et al., 2004). Few studies explore predictors of persistence and academic achievement together.

As a notable exception Tovar (2015), examined the impact of faculty and other institutional agents on the persistence and success of Latino/a community college students. Results indicated that student-faculty interactions had a slight impact on student success, but they had no effect on student persistence to graduate (Tovar, 2015). However, support from family and friends increased the students' likelihood of persisting (Tovar, 2015).

Another exception is a meta-analysis by Robbins et al. (2004) where they examined the role of psychosocial and study-skill factors (PSF variables) including achievement motivation, academic goals, institutional commitment, perceived social support, social involvement, academic self-efficacy, general self-concept, academic-related skills, and contextual influences (financial support, institution size, and institutional selectivity) on both persistence and performance among college students. Results indicated that moderate relationships existed between retention and academic goals, academic self-efficacy, and academic-related skills, but the best predictors of GPA were academic self-efficacy and motivation (Robbins et al., 2004). Results also indicated that these PSF variables were more important determinants of educational outcomes than were socioeconomic status (SES), standardized test scores, and high-school GPA

(Robbins et al., 2004). The authors provide support for the argument to include both persistence and achievement-related outcomes and to create a comprehensive and more integrated view of academic success (Robbins et al., 2004). Clearly, a better understanding of the intricacies that exist between these two outcome measures would aid in creating a more well-rounded understanding of academic outcomes. It should be noted that the relationship between persistence and achievement is not perfectly complimentary, that is to say that not every high-achieving student persists to graduation and not every low-achieving student intends to leave college (Pascarella & Terrezeni. 2005).

Current Study

The current study sought to determine which variables are the best indicators of both student persistence and achievement. To that end, the goal of this study was to assess and utilize prime indicators to create prediction equations modeling which factors are the greatest contributors to both academic achievement and persistence. Because all the previously reviewed measures have been documented as indicative of persistence and/or achievement, it was hypothesized that measures from all three domains would be useful predictors of academic success and persistence. Personality factors were predicted to be the most powerful predictors due to the relatively stable nature of personality and the fact that personality variables, such as resilience, self-efficacy, big five factors, and commitment, have been documented as predictors of both achievement and persistence across several studies. Motivational and social factors were expected to be less powerful predictors due to their malleability.

CHAPTER FOUR

METHODOLOGY

Participants

Undergraduate students at Georgia Southern University (*N* = 141) completed the study. Data from 32 participants were excluded due to random responding and incomplete submission of data. Of the remaining participants, 24 were male and 85 were female. Participant ages ranged from 18-28 years, with an average age of 19.73 (*SD* = 1.87). Participants came from various racial/ethnic backgrounds, including Asian (*N* = 1), Biracial (*N* = 4), Black/African-American (*N* = 23), Hispanic/Latino (*N* = 5), and White/Caucasian (*N* = 76).

Participants in the study were mainly first- (*N* = 44) and second- (*N* = 41) year students. Third- (*N* = 17) and fourth- (*N*= 7) year students also participated in the study. Participants came from a wide range of major/degree programs at Georgia Southern, with the most prominent being psychology (*N* = 16), biology (*N* = 12), exercise science (*N* = 12), and nursing (*N* = 12). Additionally, 23 student were first generation, 12 were honors students, 2 were student athletes on school teams, and 21 were Greek-life participants. Thirty-one students indicated that they were transfer students who had previously attended another college. The average participant reported a positive view of Georgia Southern University (*M* = 4.33, *SD* = .72). Ninety-three students in the sample reported a desire to pursue some form of graduate coursework. All but eight of the participants had completed a First-Year Experience Course during their academic career.

Participants were recruited with SONA systems software used by the Psychology Department. All participants were compensated for their time with 1 hour of research credit via

SONA, including those students who choose to withdraw from the study. These credits are used to satisfy their courses' research participation requirements; their ultimate value is determined by their course instructor. Students are always offered alternative assignments to research participation in order to earn course credit.

Materials

Criterion Measures

GPA. In order to measure GPA, participants were asked to provide an estimate of their GPA. This question was included in the demographics section of the study (see Appendix A). Additionally, students were asked to provide their student ID number and consent for their actual GPA to be pulled from their student records. This request was detailed in the informed consent document, and their student ID number was requested after the students gave their consent (See Appendix B).

Persistence. Persistence was assessed using two measures taken from previous literature on the subject of academic persistence. The first measure was a three-item Intention to Withdraw scale used by Guiffrida, Lynch, Wall, and Abel (2013). The measure asks participants to respond to three items regarding their intention to leave school using a 7-point Likert scale. The measure had good reliability ($\alpha = .79$) in the previous study, however, reliability was slightly lower in the current study ($\alpha = .69$). Because the reliability was nearly acceptable, and this measure is an important criterion variable, the measure was retained. The other measure consisted of a single item, which came from a study by Morrow and Ackerman (2012) asking participants if they believe they "will obtain a degree from this university." Responses were obtained using 7-point Likert scale.

Social Measures

Professor-Student Rapport Scale -- Brief (PSRS-B). The PSRS-B measures the rapport students perceive with their instructor using six items based on student engagement (Wilson & Ryan, 2013). It is a shortened form of the 34-item Professor-Student Rapport Scale (PSRS) developed by Wilson, Ryan, and Pugh (2010). The brief scale demonstrates good reliability (α= .84) in past studies and has been documented as a valid predictor of course grades (Wilson & Ryan, 2013). Participants responded to the scale's items using 5-point Likert scales to assess their professor's behaviors. Two items were reverse scored. Higher scores indicate greater perceived rapport with professors. Participants were asked to complete this measure twice, once while thinking about their favorite professor and once while thinking about their least favorite professor. In the present study, the PSRS-B demonstrated good reliability for assessments of rapport with both favorite (α = .82) and least favorite (α = .89) professors. Thus, this measure was retained during data analysis.

Sense of Belonging Scale (SBS). This 26-item instrument measures students' perceptions of four different social influences (Hoffman, Richmond, Morrow, & Salomone, 2012). Its four subscales include perceived peer support, perceived classroom comfort, perceived isolation, and perceived faculty support. Participants responded to the items using a 5-point Likert scale. No items were reverse scored. Higher scores on each subscale indicates greater perceived levels of their associated factors. The subscales' reliability ranged from .89 - .92 in previous studies (Hoffman, Richmond, Morrow, & Salomone, 2012). In the present study, the subscales' reliability ranged from .80 - .88, making the subscales acceptable for data analysis.

Personality Measures

Big Five Inventory (BFI-44). The BFI-44 is a 44-item instrument used to assess personality traits according to the Five Factor Model (FFM). 17 of the items are reverse scored. The reliability of the instrument's five subscales range from .75 to .90 and are above .80 on average (Benet-Martinez & John, 1998). The 3-month test-retest reliabilities of the instrument range from .80 to .90, with an average of .85 (Benet-Martinez & John, 1998). The five subscales of the instrument are based on the five components of the FFM: Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism. Higher scores on each subscales indicate a greater presence of the specified trait, lower scores indicate the presence of the oppositional trait (e.g. close-mindedness, lack of conscientiousness, introversion, disagreeableness, and emotional stability). Participants rate their agreement with the items on a 7-point Likert scale. This measure was chosen to assess the Big Five personality traits due to its brevity. In the current study, Openness (α = .76), Conscientiousness (α = .74), Extraversion (α = .88), and Neuroticism (α = .81) were retained for analysis, but Agreeableness (α = .67) was excluded from data analysis for failing to meet the reliability standard of .70.

Academic Commitment Scale (ACS). Designed to assess a student's commitment to achieving academic goals, this 30-item instrument comprises five subscales: Level of Commitment (five items, α= .84), Satisfaction (eight items, α= .90), Quality of Alternatives (three items, α= .68), Investment (five items, α= .90), and Meaningfulness (nine items, α= .91) (Human-Vogel & Rabe, 2015). Participants rate their level of agreement with the items on a 6-point Likert scale. No items are reverse scored. Together, these subscales deliver a quantitative assessment of a subject's level of commitment to their academic goals. Higher scores indicate greater levels of commitment to the pursuit of academic goals. In the present study, all subscales

had acceptable reliability, ranging from .72 - .89, thus all subscales were retained during data analysis.

Brief Resilience Scale (BRS). This instrument is composed of six items, which a participant responds to using a 5-point Likert scale. Three items are reverse scored. The measure has good internal consistency because Cronbach's alpha ranged from .80 to .91 across four trials (Smith et al., 2008). Test-retest reliability was .69 and .62 in two trials and the scale also demonstrated good convergent validity (Smith et al., 2008). Higher scores indicate greater resilience to stressors. The scale was chosen to assess resilience in this study due to its concise nature. The scale possessed good reliability (α = .89) in the current study and was retained during data analysis.

Academic Self-Efficacy Scale (ASES). On the eight-item ASES, participants rate their agreement with statements reflecting their confidence in their academic abilities and skills using a 7-point Likert scale. No items are reverse scored. The scale has good internal consistency (α= .81) and predictive validity with respect to academic outcomes (Chemers, Li-tze, & Garcia, 2001). Higher scores reflect greater self-confidence about one's ability to meet academic challenges and be successful. In the present study, the scale possessed good reliability (α = .83), therefore it was retained for data analysis.

Motivational Measures

Academic Values Scale (AVS). The AVS is a 29-item instrument designed to measure student motivations for attending school (Wong & Fry, 1998). The instrument has six subscales, each scale reflects a subject's tendency rely on the respective motivation type: intrinsic value, instrumental value, personal development, external pressures, social interest, and "no better

alternative." "No better alternative" is a sub scale created from items which may indicate a student is apprehensive about the post-college world of employment and maturity. No items are reverse scored. Participants respond to each prompt using a 7-point Likert scale. Each scale demonstrated acceptable reliability with Cronbach's alpha ranging from .61 to .86 (Wong & Fry, 1998) in prior studies. In the current study, only three scales were maintained for data analysis after meeting acceptable reliability: external pressures (α = .77), instrumental value (α = .70), and "no better alternative" (α = .85). Three scales failed to meet reliability and were thus excluded from analysis: personal development (α = .16), intrinsic value (α = .67), and social influences (α = .62).

Achievement Goal Questionnaire- Revised (ACQ-R). The AGQ-R consists of 12 items which examine achievement goals using four subscales: Mastery-Approach (α= .84), Mastery-Avoidance (α= .88), Performance-Approach (α= .92), and Performance-Avoidance (α= .94), each with good internal consistency (Elliot & Murayama, 2008). The purpose of these subscales is to measure student motivation to achieve academic goals using a 2 x 2 model (Approach-Avoidance x Content Mastery-Course Performance) based on the need for achievement and fear of failure constructs (Elliot & Murayama, 2008). Higher scores on each subscale indicate a greater level of that type of motivation. Participants respond to the items using a 5-point Likert scale. No items are reverse scored. As in prior research, the four subscales demonstrated good reliability, ranging from .80 - .84, thus all scales were retained during data analysis.

School Goals Scale (SGS). The SGS consists of 11 items distributed across two subscales, one perceiving Task Goals (six items, α= .81) and the other perceiving Ability Goals (five items, α= .80) (Roeser, Midgley, & Urdan, 1996). Participants respond to each item using a 5-point Likert scale. No items are reverse scored. Higher scores on either scale indicate a greater

belief by the subject that their school's goals are organized according to that framework. The SGS was originally used to assess middle school students' perceptions of their schools' tendency to promote either ability-based or task-oriented climates. For the current study, the wording has been slightly altered (e.g. teachers vs. professors) to make the scale more appropriate for use by undergraduate students. Also, a third subscale on student-teacher relationships was dropped in favor of Wilson and Ryan's (2013) PSRS-B. Reliability analyses were acceptable for both task-oriented ($\alpha = .70$) and ability-oriented ($\alpha = .74$) scales. Both scales were retained during data analysis.

Supplemental Measures

Demographic Questions. Demographic questions included in the study cover a variety of topics (e.g. major, gender, age, academic classification, GPA, etc.) to draw a more complete picture of the study's participants and account for miscellaneous variables which may serve as indicators of student success. Question formats varied including scales, open response, and multiple choice, allowing participants to make the most accurate self-reports possible. For a copy of this measure, see Appendix A.

Procedure

After registering as a participant for the study using the psychology department's SONA Systems software, participants followed a link to the survey, which was hosted in Qualtrics. Participants were presented with a copy of the informed consent before they were allowed to begin completing the measures. By selecting "yes," participants indicated that they had read and understood the informed consent and were willing to participate in the study (for a copy of the informed consent, see Appendix B). Participants who selected "yes" were prompted to provide

their student ID number so that their GPA could later be retrieved from their student records (for a copy of the ID submission page, see Appendix B). Participants were then asked to complete the demographics section of the survey. After completing the demographics section, participants completed all other measures in a random order to counter any potential order effects. Item randomization was also used within each survey that contained more than one item. After completing all measures, participants were presented with the final page of the study, which thanked them for submitting their data and asked them to email the researcher for completion credit (for a copy of the debriefing page, see Appendix C). Participants who did as asked were awarded 1 hour of research credit.

CHAPTER FIVE

RESULTS

The results include two levels of analysis. The primary analyses included Simultaneous regression to predict the criterion variables which best predicted academic performance and persistence to graduate. Comparisons were also made between Simultaneous regression models in order to examine which groups of variables (personality, motivational, and social) explained more variability in each criterion variable. The secondary analyses include bivariate correlations among the criterion variables to explore the zero-order correlations among the variables.

Primary Analyses

All data collected were subjected to analysis using SPSS software. Simultaneous regression was used to test the predictive power of the social, motivational, and personality measures. See tables 1-3 for correlations between criterion measures and personality, motivational, and social predictors, respectively.

Three regression models were created to assess prediction of actual GPA (based on reviewed transcripts). The regression model for social factors predicted 12% of the variance, $F(6, 124) = 3.94$, $p = .001$. Personality factors predicted 13% of the variance, $F(11, 104) = 2.59$, $p = .006$. The regression model comprised of reliable motivational measures predicted the most variance at 14%, $F(9, 91) = 2.83$, $p = .006$. Three significant predictors emerged from the motivational measures: the Academic Goals Questionnaire (AGQ) Performance-Approach scale ($\beta = .07$, $p = .041$), the AGQ Performance-Avoidance scale ($\beta = -.10$, $p = .005$), and the School Goals Scale Ability-Oriented climate perceptions scale ($\beta = -.11$, $p = .004$), predicted actual GPA. Consult Table 4 for further details regarding the actual GPA regression models.

Three independent regression models were created to determine the best predictor of self-reported GPA. The regression model for social factors predicted 17% of the variance, $F(6, 125) = 5.46$, $p < .001$. The personality ($R^2 = .09$, $F(11, 106) = 2.022$, $p = .033$) and motivational ($R^2 = .09$, $F(9, 93) = 2.115$, $p = .036$) models were less capable of predicting self-reported GPA. When examining individual predictors, the Sense of Belonging Scale (SBS) Peer Support Scale ($\beta = .03$, $p = .023$) and the SBS Classroom Comfort Scale ($\beta = -.07$, $p < .001$), significantly predicted self-reported GPA. Consult Table 5 for more details regarding the self-reported GPA regression models.

When assessing intention to withdraw, social factors predicted 13% of the variance, $F(6, 125) = 4.33$, $p = .001$. Personality measures predicted 26% of the variance, $F(11, 106) = 4.73$, $p < .001$. Results also indicated that motivational factors predicted 11% of the variance in intention to withdraw, $F(9, 93) = 2.36$, $p = .019$. Interestingly, no personality predictors were significant predictors of intention to withdraw. Extraversion did approach significance ($\beta = -.08$, $p = .068$). Consult Table 6 for more details regarding the intention-to-withdraw regression models.

A final series of regression analyses were conducted to assess the selected personality, motivational, and social factors' ability to predict the perceived likelihood of earning a degree from this university. Social factors marginally predicted 4% of the variance, $F(6, 125) = 1.961$, $p = .076$. One social measure was marginally predictive of degree obtainment likelihood: the SBS faculty support subscale ($\beta = .03$, $p = .064$). Personality measures did not significantly predict likelihood to earn a degree, $F(11, 106) = 1.008$, $p = .445$. Motivational measures were also marginally successful at predicting 6% of the variance, $F(9, 93) = 1.775$, $p = .083$. One motivational measure emerged as a significant predictor: the AVS instrumental value subscale (β

= .08, p = .045). See Table 7 for further details regarding the regression models for likelihood of earning a degree.

Secondary Analyses

Secondary analyses included the bivariate correlations of outcome measures. Perhaps not surprisingly, self-reported GPA and actual GPA correlated significantly (r = .97, p < .001). Intention to withdraw was significantly correlated with actual GPA (r = -.25, p = .008), and likelihood of obtaining a degree from this university was significantly correlated with intention to withdraw (r = -.24, p = .010). The single-item, likelihood-to-withdraw measure was significantly correlated with self-reported GPA (r = -.26, p = .005), actual GPA (r = -.33, p < .001), and intention to withdraw (r = .39, p < .001). For a correlation matrix of the relationships among the dependent measures, see Table 8.

CHAPTER SIX

DISCUSSION

The goal of this study was to assess the effectiveness of personality, motivational, and social factors as predictors of academic achievement and persistence to graduate. It was hypothesized that measures from all three domains would be useful predictors of academic success and persistence, but personality factors were expected be the most powerful predictors due to the relatively stable nature of personality and the documented evidence of self-efficacy (Chemers, Li-tze, & Garcia, 2001; Høigaard et al., 2015; MacPhee, Farro, & Canetto, 2013; Lane & Lane, 2001; Robbins et al., 2004), big five traits (Chamorro-Premuzic, & Furnham, 2003; De Raad, 1996; De Raad, & Schouwenberg, 1996; Farsides, & Woodfield, 2003; Furnham, Chamorro-Premuzic, & McDougall, 2003; Taylor, Scepansky, Lounsbury, & Gibson, 2010), resilience (Kotzé & Kleynhans, 2013; Sheard, 2009; Sheard & Golby, 2007) and commitment (Human-Vogel & Rabe, 2015; Kluger & Koslowsky, 1988; Lord, Bjerregaard, & Hartman, 2013; Sheard, 2009) as predictors of both achievement and persistence. These expectations were partially supported by the results.

When assessing prediction of actual GPA, motivational measures accounted for the greatest variance at 14%, slightly outpacing personality and social factors. Social factors predicted 17% of the variance for self-reported GPA, almost twice the amount predicted by both personality and motivational factors. While it was not the prime predictor of either measure of academic achievement, personality measures managed to predict 26% of the variance for student persistence as measured by intention to withdraw from school in comparison to social factors (13%) and motivational factors (11%). Prediction of student persistence using a single-question item based on degree completion was less successful, with social and motivational measures

returning marginally significant results with low predictive power (4% and 6%, respectively). Personality factors were unable to predict variance for this measure of persistence.

Prediction of Academic Achievement

When simply examining beta values and *p*-values in the regression equations, the motivational factors which emerged as significant predictors of actual GPA included desire to outperform peers (need for achievement), fear of performing worse than peers (fear of failure), and having perceptions of an ability-oriented campus climate. The relationships between performance motivations and actual GPA were aligned with the results of Elliot and Murayama (2008) who found that exam performance was better when students were motivated to outperform peers and worse when students were afraid of performing poorly in relation to others. Based on the current findings, it seems their results generalize from exam performance to overall GPA.

With regard to campus climate, Høigaard et al. (2015) noted that ability-oriented climates are more detrimental to student success than task-oriented climates. Ability-oriented climates are those in which the school seems to promote a culture centered on rewarding natural talent rather than hard work. The inclusion of ability-oriented climate perceptions as a negative predictor of achievement is logical, but it is the exclusion of the task-oriented climate scale which is surprising. Perhaps perceptions of subjectivity and elitism by university faculty and staff are simply more palpable and powerful in the minds of college students. That is, having a greater desire to outperform other students, being unafraid to do worse than other students, and not perceiving the campus climate as ability-oriented related to higher GPA. Overall, it seems that the best way to promote student success is to promote a fair and unbiased campus climate whereby students might be motivated to achieve their greatest possible success (as perceived by

outperforming others) and without fearing the negative consequences of failure (as perceived by being surpassed by others). Perhaps, promoting a growth mindset and long-term resilience may indirectly support academic achievement.

For self-reported GPA, beta values and *p*-values indicated that the social factors which best predict the dependent measure include having positive support from peers and being less comfortable contributing to classroom activities. The positive influence from peers is both reasonable and a bit surprising. First, because Astin (1993) argues that greater integration with the campus community (faculty, staff, peers, etc.) has a positive effect on grades, however, the results of Guiffrida, Lynch, Wall, and Abel (2013) indicate that being more related to peers can be detrimental to grades. The scale itself seems primarily focused on being able to gain academic support from peers with relationship formation taking a secondary role. It may be that these results reflect that having a social network in place to provide support for classes is beneficial to course performance, at least with regards to how students view their own performance. The negative relationship between achievement and classroom comfort seems odd, particularly since it seems logical that students who are comfortable with actively participating in class are more likely to do well. Perhaps in this case, student comfort with class participation reflects an attitude of overconfidence towards their performance overall, thus making their performance expectations fall short.

It is interesting that motivational and social factors are the best predictors of academic achievement. Considering the domain overlap between the motivational and social factors which emerged as significant predictors, perhaps student achievement is most subject to the forces of social cognition; especially with respect to the competitive motivations and negative impact of elitist climate perceptions revealed in these results. Indeed, there appeared to be many social

overtones given to the motivational factors which emerged as predictors of actual GPA and the variance was not overly divergent between social and motivational domains (approximately 2%).

Correlates of Academic Achievement

Although Simultaneous regression highlighted social and motivational factors are the prime predictors of academic achievement, note the patterns of bivariate correlations in Tables 1-3. Personality predictors displayed several interesting patterns. First, conscientiousness, which was hypothesized to be one of the variables most likely to predict achievement, did have a statistically significant, positive correlation with actual GPA, although it did not correlate with self-reported GPA. Previous research supports conscientiousness' positive influence on grades (Chamorro-Premuzic, & Furnham, 2003; De Raad, 1996; De Raad, & Schouwenberg, 1996; Farsides, & Woodfield, 2003; Furnham, Chamorro-Premuzic, & McDougall, 2003). The relationship between self-reported GPA and conscientiousness did approach significance (p = .063); perhaps the present study simply lacked the power to obtain significance, or overlap among the predictors parceled out variability for key predictors. Participants' investment in their studies also had a statistically significant, positive relationship with both measures of GPA, indicating that the more deeply students invest their own time and effort into their education, the more likely they are to do well. This also aligned with the findings of Kluger and Koslowsky (1988).

Academic self-efficacy, another personality measure hypothesized to be predictive of academic achievement, had a significant, positive relationship with both measures of GPA. In fact, its relationship with both measures of GPA was the strongest relationship between personality predictors and achievement measures. This indicates that the more students believe in their ability to accomplish their coursework and be successful, the more likely they are to

actually do so. This makes sense, as self-efficacy is quite prevalent in the literature on academic achievement. For example, Chemers, Li-tze, and Garcia (2001) found that self-efficacy and optimism together predicted student achievement. Lane and Lane (2001) noted that being confident about meeting program requirements predicted academic success. Robbins et al. (2004) found that academic self-efficacy was one of the best predictors of both achievement and persistence. More recently, Høigaard et al. (2015) noted that self-efficacy can be nurtured by a task-oriented (objective and unbiased) environment and thereby enable students to be successful.

Motivational correlates of achievement were quite interesting. Performance approach (a need for achievement) and performance avoidance (fear of failure), the significant predictors which emerged from the regression equations, did not have significant relationships outside of the regression model. However, ability-oriented climate perceptions continued to display an expected significant, negative relationship to both measures of GPA. Having "no better alternative" to college also had a significant, negative relationship with actual GPA. This may indicate that being unmotivated is detrimental to student performance, similar to how it negatively impacts student persistence (Vallerand & Bissonnette, 1992).

Correlations between social measures and outcomes also hold interesting points for discussion. The correlations depict peer influence, as positively related with both measures of GPA. Peer influence was one significant predictor helping to explain the variance for self-reported GPA. Perceived isolation also had a statistically significant, negative correlation with self-reported GPA. This could further reflect the stance of Astin (1984) who suggested that student involvement with peers and other members of the campus community directly contributes to student success. Logically, students who feel isolated are unlikely to be highly involved students and therefore are less likely to thrive academically.

A further factor which could explain any differences between the predictive components of these two regression equations is the difference between actual GPA and self-reported GPA. Although the relationship between both measures of GPA was both significant and strong (r = .97, $p < .001$), it is not a perfect relationship. Naturally, self-reported GPA is likely to experience a bit of perceptual bias because students are likely to over- or under- estimate their own performance, perhaps reflected in how they perceive their relationships with their peers. Similarly, motivational variables may act more subconsciously to influence actual GPA. It seems entirely possible that a tendency to inaccurately estimate academic performance could account for the minor differences between the regression models. That being said, after considering the two regression models presented here and the relationship between actual and self-reported GPAs, it can be concluded that using actual GPAs may be better to predict academic achievement. Furthermore, actual GPA is a slightly more valid measure of academic achievement. It may be that at other institutions, students are not as accurate in their self-reported GPAs, so consulting student records and obtaining actual GPAs may be a safer policy when conducting academic research. However, the results of this study do suggest that using self-reported measures of GPA may be acceptable for research purposes if obtaining actual GPAs is impossible or inconvenient.

Prediction of Persistence to Graduation

When simply examining beta values and *p*-values in the regression equations, no personality factors were significant predictors of intention to withdraw. Extraversion was marginally predictive of intention to withdraw. The relationship between the two was negative, which may be reflective of how student involvement on campus supports student persistence (Astin, 1984). This supports the notion that highly extraverted students would be more involved

and thus less likely to want to leave school. Still, it seems surprising that more of the personality measures in the current study were not significant predictors of intention to withdraw from school. Perhaps in this case, the failure to find significance stems from the participant pool. As noted before, many of the participants were first-year and sophomore students who are all still relatively new to college. Thus, they may not be able to submit data which can adequately gauge intention to persist to graduation simply because graduation is so far away.

Regression models for the item "I will earn a degree from this university," were similarly ambiguous. Both social and motivational measures returned marginally significant results, but with low predictive power. For social measures, one factor emerged as a marginal predictor of degree obtainment, faculty support. For motivational measures, instrumental value did emerge as a significant predictor of degree obtainment. The strength of the relationships for both of these predictors was quite small. Based on the low predictive power and marginal significance, I think that this item does not appear to be a good indicator of persistence. The item appears to have face validity, but perhaps the wording of the item sends the wrong message. The item states that earning a degree at this particular institution is the main focus, but if the earning of a degree is ultimately what matters to the researcher and not where that degree is earned, then students who intend to transfer and earn their degree elsewhere may mark this item in the same manner as a student who might intend to drop out of college altogether. Indeed, this question serves better as a measure of individual institutional retention than persistence to graduation overall. It may be that the personality, motivational, and social factors used as predictors in this study were unable to predict responses to the item because of the confusion about intention to graduate at all versus graduating from this institution.

Correlates of Persistence to Graduation

Although extraversion did have the most predictive power for intention to withdraw, and likelihood to earn a degree was marginally significant, the simple bivariate correlations show a greater wealth of shared variability between predictors and criterion as evidenced by many significant correlations. In the following paragraphs, I will discuss bivariate correlations that were significant for both measures of persistence, beginning with personality, then addressing similar patterns of correlations for motivational factors, then correlations in common for social variables. Next I will discuss correlations of only intention to withdraw with personality, motivational factors, and social variables. Finally I will cover simple bivariate correlations for only likelihood to earn a degree with the three predictor domains of interest.

Correlates of Intention to Withdraw and Likelihood to Earn a Degree. Meaningfulness was the only personality measure which negatively related to intentions to withdraw and positively related to degree obtainment likelihood. This suggests that when students perceive their coursework as more meaningful, they are less likely to withdraw from school and more likely to persist to earn a degree. It is interesting that this relationship appeared in the sample, since it is primarily composed of first- and second-year students. Meaningfulness seems like a construct which would be more closely associated with major coursework than core coursework, but the present sample appeared to find meaning in foundational college courses.

An examination of the correlations among motivational variables and both dependent measures revealed that instrumental value (which is more akin to extrinsic motivation) correlated negatively with intention to withdraw and positively with likelihood of obtaining a bachelor's degree. External pressure (extrinsic motivation) correlated positively with likelihood of earning a degree but not with intention to withdraw. Because our measures of intrinsic motivation were

dropped for low reliability, these results cannot counter to the idea that extrinsic motivation is a much stronger predictor of persistence than intrinsic motivation (Morrow & Ackermann, 2012; Tinto, 1987), however they do provide evidence that extrinsic motivation has a strong relationship with persistence. Furthermore, task-oriented climate perceptions correlated negatively with intention to withdraw and positively with degree obtainment, while ability-oriented climate perceptions only correlated positively with intention to withdraw. Together, these results seem to indicate that task-oriented perceptions may influence persistence more deeply than ability-oriented perceptions. In other words, student tend to persist when they believe their school values hard work.

With regard to social influences on persistence, perceptions of faculty support were positively related to persistence and negatively related to withdrawal. This supports previous research which has documented faculty-student relationships as supportive of academic achievement (Astin, 1984; Hoffman, 2014; Morrow and Ackermann, 2012; Tinto, 1987; Turner, 2016). Peer influence was also related negatively to withdrawal intentions and positively to degree obtainment, as expected (Bean, 1982). Perceived isolation also correlated as expected: positively with intention to withdraw and negatively with degree obtainment; thus directly reflecting the stance of Astin (1984) who suggested that student involvement with peers and other members of the campus community directly contributes to student persistence. Overall, these two relationships support the idea that peer support also aids intention to graduate.

***Correlates of Intention to Withdraw*.** Several predictors did correlate with intention to withdraw but not with likelihood of earning a degree. First, conscientiousness, which was hypothesized to be one of the variables most likely to predict both achievement and persistence, did negatively correlate with intention to withdraw. This is not surprising, given that this same

relationship was observed by Taylor, Scepansky, Lounsbury, and Gibson (2010). Extraversion also negatively correlated with intention to withdrawal, perhaps indicating that a willingness to engage with peers is beneficial to persistence (Bean, 1982). Commitment, satisfaction, perceptions of the quality of alternatives, and investment related to intention to withdraw as expected. This indicates that commitment (Lord, Bjerregaard, & Hartman, 2013), satisfaction with studies, and investing more time and effort into studies (Kluger & Koslowsky, 1988) are negatively correlated with intention to withdraw from school. Perceiving other alternatives to school as attractive positively relates to intention to withdraw. The negative relationship between resilience and intention to withdraw also indicates that it is a potential asset to persistence (Kotzé & Kleynhans, 2013). Self-efficacy was negatively correlated with intention to withdraw, indicating that participants' greater belief in their ability to navigate the challenges of academics may relate to their likelihood of remaining enrolled in school.

A few motivational measures also correlated with intention to withdraw from school, but not likelihood of earning a degree. "No better alternative" to school correlated positively with intention to withdraw, indicating that because students do not perceive school as any more important than their alternative life choices, they may be more likely to withdraw from school. Perhaps these students are best described as unmotivated. Both the performance approach (a desire to outperform peers) and avoidance (a desire to avoid underperforming compared to peers) subscales of the academic goals questionnaire correlated negatively with intention to withdraw. This suggests that students who persist to graduation may do so because they are motivated to be seen as equally or more competent than their peers. Interestingly, these were two of the significant predictors for self-reported GPA, which implies that a desire for competence is indeed a motivating factor in both achievement and persistence. Despite the interesting correlations

between personality and motivational predictors and intention to withdraw, no social measures independently correlated with intention to withdraw.

Correlates of Likelihood to Earn a Degree. Although it was a less powerful regression model, independent relationships between personality predictors and this criterion variable emerged. One motivational measure, the academic goal questionnaire's mastery approach subscale, correlated positively with likelihood to earn a degree. This suggests that students who score highly on this measure complete their degrees in order to learn as much about their major field of study as possible.

One social measure also correlated only with likelihood to obtain a degree. Professor-student rapport perceptions for the least favorite professor correlated negatively with likelihood of degree obtainment. This is surprising as all previous research has suggested that it is positive relationships with faculty which promote degree completion (Turner, 2016). Overall, while only one measure emerged as a marginal predictor of persistence in both regression equations, an examination of the correlations between predictors and the criterion measure seems to suggest that more factors could be related to academic persistence than were revealed in the present study.

Study Limitations and Future Directions

A main limitation of this study may have been that the sample was too new to college for data collection to be as informative as possible. The data were collected from first-year students (N = 44) and sophomores (N = 41). Juniors (N = 17) and seniors (N = 7) were underrepresented in relation to the total student population. To correct this limitation, a more stratified sample of students should be recruited in future studies to ensure that all levels of the university are

represented. A longitudinal study centered on a randomly selected group of participants could also provide a remedy to the solution. From their date of first enrollment, these students might periodically check in with the research team and provide data relevant to their personality, social influences, and motivational measures over time. Of course grades could be pulled from academic records and even analyzed at the end of each semester, making any significant relationship between predictors and outcome measures even more apparent. Persistence might be measured by enrollment status, achievement of a degree, and the time taken to achieve the degree. Ideally, participants must be followed from entry until graduation or withdrawal. Students who transfer to a different school might be excluded from the data, asked to continue submitting data, or simply used to examine institutional retention rates. These potential solutions have the potential to yield a more robust model for predicting academic success and persistence.

Another limitation might be the sheer number of measures used in the study. Although the goal of the study was a comprehensive examination of the factors predicting academic success and persistence, this ambitious approach may also have been a weakness. Although the study did, in fact, examine many aspects tied to academic performance and persistence to graduate, perhaps a better approach to studying this problem would have been to gradually add measures after starting with only a few of the most powerful measures previously documented as measures of success or limiting the measures to purely personality, motivational, or social domains rather than including some ambiguous measures that really had aspects of more than one domain. Even so, just using fewer measures and being a bit more conservative in what components of the measures were used may have increased the likelihood of finding significant results. It may also be that using so many measures exhausted our participants, making it more likely that their potentially valuable data were instead compromised by random responding.

After all, out of the 141 participants who originally submitted data, 32 were discarded for failing to complete the study and/or answer the response checks correctly. Their data were not subject to any analysis or inclusion in this paper.

An interesting premise that occurred while writing this paper involved the consideration of differences between members of generations. Some of the literature reviewed to inform this study's hypotheses was a bit dated. There could easily be trends which vary from generation to generation that establish which factors are the most powerful predictors of academic success and persistence. For example, it is often noted that millennials differ from prior generations due to their seemingly constant connection to their peers and family at all times, as facilitated by technological advances. For this reason, it may be that the impact of social factors was underestimated when preparing the hypotheses; motivational and personality measures may have played a greater role in predicting the academic outcomes of previous generations than social factors in comparison to modern undergraduate students. It would be interesting to see how this might be addressed in future research, such as comparing the average results of millennials to the average scores of members of generation X, the baby boomers, and (later on) the emerging Generation Z.

As with every study, the present study has presented both new findings and new potential questions for future studies. While identifying strong predictors of academic success, being able to predict academic persistence has remained elusive. Without a doubt, being able to predict both achievement and persistence effectively and efficiently will be crucial to ensuring that the goals of universal education might become a reality. For students, finding a predictor of academic success would mean easing the burdens encountered during the pursuit of a college education. For faculty, it would mean being able to serve as better teachers to all students. For staff, it

would mean being able to ensure that all students can get the support and services they truly need to optimize performance. Opportunities for higher education have become increasingly more accessible, but we must also continue to improve our ability to assess and enhance educational outcomes.

References

Allen, J., Robbins, S. B., Casillas, A., & Oh, I. (2008). Third-year college retention and transfer: Effects of academic performance, motivation, and social connectedness. *Research in Higher Education, 49,* 647-664. doi: 10.1007/s11162-008-9098-3.

Astin, A. W. (1984). Student involvement: A developmental theory for higher education. *Journal of College Student Development. 40*(5), 518-529.

Astin, A. W. (1993). *What matters in college?: Four critical years revisited* (Vol. 1). San Francisco: Jossey-Bass.

Bean, J. P. (1982). Student attrition, intentions, and confidence: Interaction effects in a path model. *Research in Higher Education, 17*(4), 291-320. doi:10.1007/BF00977899.

Benet-Martinez, V., & John, O. P. (1998). *Los Cinco Grandes* across cultures and ethnic groups: Multitrait multimethod analyses of the Big Five in Spanish and English. *Journal of Personality and Social Psychology, 75*, 729-750. doi: 10.1.1.526.5908.

Bers, T., & Younger, D. (2014). The First-Year Experience in Community Colleges. *New Directions for Institutional Research*, *2013*(160), 77-93. doi:10.1002/ir.20062.

Busato, V. V., Prins, F. J., Elshout, J. J., & Hamaker, C. (2000). Intellectual ability, learning style, personality, achievement motivation and academic success of psychology students in higher education. *Personality and Individual Differences, 29,* 1057-1068. doi: 10.1016/S0191-8869(99)00253-6.

Chamorro-Premuzic, T., & Furnham, A. (2003). Personality predicts academic performance: Evidence from two longitudinal university samples. *Journal of Research in Personality*, *37*(4), 319-338. doi:10.1016/S0092-6566(02)00578-0.

Chemers, M. M., Li-tze, H., & Garcia, B. F. (2001). Academic Self-Efficacy and First-Year College Student Performance and Adjustment. *Journal of Educational Psychology*, *93*(1), 55-64. doi: 10.1037//0022-0663.93.1.55.

Cho, S. W., & Karp, M. M. (2012). Student success courses and educational outcomes at Virginia community colleges. *CCRC Assessment of Evidence Series*, 1-19.

Colarelli, S. M., & Bishop, R. C. (1990). Career commitment functions, correlates, and management. *Group & Organization Management*, *15*(2), 158-176.

Cox, R. (2009). The college fear factor: How students and professors misunderstand one another. [IPad Kindle App Version]. *Retrieved from Amazon.com*.

Dadgar, M., Nodine, T., Bracco, K. R., & Venezia, A. (2014). Strategies for Integrating Student Supports and Academics. *New Directions for Community Colleges*, *2014*(167), 41-51. doi: 10.1002/cc.20109.

De Raad, B. (1996). Personality traits in learning and education. *European Journal of Personality*, *10*(3), 185-200.

De Raad, B., & Schouwenburg, H. C. (1996). Personality in learning and education: A review. *European Journal of personality*, *10*(5), 303-336.

Elliot, A. J., & Murayama, K. (2008). On the measurement of achievement goals, critique, illustration, and application. *Journal of Educational Psychology, 100*(3), 613-628. doi: 10.1037/0022-0663.100.3.613.

Farsides, T., & Woodfield, R. (2003). Individual differences and undergraduate academic success: The roles of personality, intelligence, and application. *Personality and Individual differences*, *34*(7), 1225-1243. doi: 10.1016/S0191-8869(02)00111-3.

Furnham, A., Chamorro-Premuzic, T., & McDougall, F. (2003). Personality, cognitive ability, and beliefs about intelligence as predictors of academic performance. Learning and Individual Differences, 14, 49-66. doi:10.1016/j.lindif.2003.08.002.

Guiffrida, D. A. & Lynch, M. F. & Wall, A. F. & Abel, D. S. (2013). Do Reasons for Attending College Affect Academic Outcomes?: A Test of a Motivational Model from a Self-Determination Theory Perspective. *Journal of College Student Development* 54(2), 121-139. The Johns Hopkins University Press. Retrieved September 22, 2015, from Project MUSE database. doi: 10.1353/csd.2013.0019.

Hoffman, E. M. (2014). Faculty and student relationships: Context matters. *College Teaching*, *62*, 13-19. doi: 10.1080/87567555.2013.817379.

Hoffman, M., Richmond, J., Morrow, J., & Salomone, K. (2002). Investigating "sense of belonging" in first-year college students. *Journal of College Student Retention: Research, Theory & Practice, 4*(3), 227-256.

Høigaard, R., Kovač, V. B., Øverby, N. C., & Haugen, T. (2015). Academic Self-Efficacy Mediates the Effects of School Psychological Climate on Academic Achievement. *School Psychology Quarterly*, *30*(1), 64-74. doi: 10.1037/spq0000056

Human-Vogel, S., & Rabe, P. (2015). Measuring self-differentiation and academic commitment in University students: A case study of education and engineering students. *South African Journal of Psychology*, *45*(1), 60-70. doi: 10.1177/0081246314548808.

Karp, M. M., O'Gara, L., & Hughes, K. L. (2008). Do Support Services at Community Colleges Encourage Success or Reproduce Disadvantage? An Exploratory Study of Students in Two Community Colleges. CCRC Working Paper No. 10. *Community College Research Center, Columbia University*.

Kluger, A. N., & Koslowsky, M. (1988). Commitment and academic success. *Social Behavior & Personality: An International Journal*, *16*(2), 121-125.

Kotzé, M., & Kleynhans, R. (2013). Psychological Well-Being and Resilience as Predictors of First-Year Students' Academic Performance. *Journal of Psychology in Africa (Elliott & Fitzpatrick, Inc.)*, *23*(1), 51-59.

Kuncel, N. R., Credé, M., & Thomas, L. L. (2005). The validity of self-reported grade point averages, class ranks, and test scores: A meta-analysis and review of the literature. *Review of educational research*, *75*(1), 63-82. doi: 10.3102/00346543075001063.

Lane, J. & Lane, A. (2001). Self-efficacy and academic performance. *Social Behavior and Personality*, 29(7), 687-694. doi: 10.2224/sbp.2001.29.7.687.

Le, B., & Agnew, C. R. (2003). Commitment and its theorized determinants: A meta–analysis of the Investment Model. *Personal Relationships*, *10*(1), 37-57. doi: 10.1111/1475-6811.00035.

Lin, H., & Hwang, Y. (2014). Do feelings matter? The effects of intrinsic benefits on individuals' commitment toward knowledge systems. *Computers in Human Behavior*, *30*, 191-198. doi: /10.1016/j.chb.2013.07.056.

Lord, V. B., Bjerregaard, B., & Hartman, J. L. (2013). Evaluating the Graduation Gap: Interventions Designed to Enhance Upper-level Student Success and Commitment. *Journal of Criminal Justice Education*, *24*(2), 153-174. doi: 10.1080/10511253.2012.679362.

Luzzo, D. A. (1994). An Analysis of Gender and Ethnic Differences in College Students' Commitment to Work. *Journal of Employment Counseling*, *31*(1), 38-45. doi: 10.1002/j.2161-1920.1994.tb00411.x.

MacPhee, D., Farro, S., & Canetto, S. S. (2013). Academic self-efficacy and performance of underrepresented STEM majors: Gender, ethnic, and social class patterns. *Analyses of Social Issues and Public Policy*, *13*(1), 347-369. doi: 10.1111/asap.12033.

Maddi, S. R., Khoshaba, D. M., Persico, M., Lu, J., Harvey, R., & Bleecker, F. (2002). The personality construct of hardiness: II. Relationships with comprehensive tests of personality and psychopathology. *Journal of Research in Personality*, *36*(1), 72-85. doi: 10.1006/jrpe.2001.2337.

Miller, J., Janz, J., & Chen, C. (2007). The retention impact of a first-year seminar on students with varying pre-college academic performance. *Journal of the First-Year Experience & Students in Transition*, *19*(1), 47-62.

Morrow, J. A., & Ackermann, M. E. (2012). Intention to persist and retention of first-year students: The importance of motivation and sense of belonging. *College Student Journal*, *46*(3), 483-491

National Center for Education Statistics. (2016, N.D.) *Fast facts: Back to school statistics*. Retrieved from: http://nces.ed.gov/fastfacts/display.asp?id=372

Pascarella, E. T., & Terenzini, P. T. (2005). How college affects students: A third decade of research (Vol. 2).

Pike, G. R., & Kuh, G. D. (2005). First-and second-generation college students: A comparison of their engagement and intellectual development. *Journal of Higher Education*, 276-300.

Price, E. (2010). Early alert at Sinclair Community College.

Research Overview, Community College Research Center. (2013). *What we know about nonacademic student supports*. New York, NY: Community College Research Center, Teachers College, Columbia University.

Robbins, S. B., Lauver, K., Le, H., Davis, D., Langley, R., & Carlstrom, A. (2004). Do psychosocial and study skill factors predict college outcomes? A meta-analysis. *Psychological Bulletin*, *130*(2), 261-288.

Roeser, R. W., Midgley, C., & Urdan, T. C. (1996). Perceptions of the school psychological environment and early adolescents' psychological and behavioral functioning in school: The mediating role of goals and belonging. *Journal of educational psychology*, *88*(3), 408. doi: 10.1037/0022-0663.88.3.408.

Rusbult, C. E., & Farrell, D. (1983). A longitudinal test of the investment model: The impact on job satisfaction, job commitment, and turnover of variations in rewards, costs, alternatives, and investments. *Journal of applied psychology*, *68*(3), 429. doi: 10.1037/0021-9010.68.3.429.

Rusbult, C. E., Martz, J. M., & Agnew, C. R. (1998). The investment model scale: Measuring commitment level, satisfaction level, quality of alternatives, and investment size. *Personal relationships*, *5*(4), 357-387. doi: 10.1111/j.1475-6811.1998.tb00177.x.

Ryan, R. G., Wilson, J. H., & Pugh, J. L. (2011). Psychometric characteristics of the professor–student rapport scale. *Teaching of Psychology*, *38*(3), 135-141. doi: 10.1177/0098628311411894.

Sanders, L. (2013). Colleges confront a gender gap in student engagement. Retrieved from http://chronicle. com/article/Men-Like-to-Chill-Women-Are/135290

Scott, D. A., Havice, P. A., Livingston, W. G., & Cawthon, T. W. (2012). Men's Identity Development: Issues and Implications for Residence Life. *Journal of College & University Student Housing*.

Sheard, M. (2009). Hardiness commitment, gender, and age differentiate university academic performance. British Journal of Educational Psychology, 79, 189-204. doi: 10.1348/000709908X304406.

Sheard, M., & Golby, J. (2007) Hardiness and undergraduate academic study: The moderating role of commitment. *Personality and Individual Differences*, *43*, 579-588. doi: 10.1016/j.paid.2007.01.006.

Smith, B.W., Dalen, J., Wiggins, K., Tooley, E., Christopher, P. & Bernard, J. (2008). The brief resilience scale: Assessing the ability to bounce back. *International Journal of Behavioral Medicine, 15,* 194-200. doi: 10.1080/10705500802222972.

Soria, K. M., & Stebleton, M. J. (2012). First-generation students' academic engagement and retention. *Teaching in Higher Education*, *17*(6), 673-685. doi: 10.1080/13562517.2012.666735.

South Texas College. (2006). *A comparative analysis of the STC case management advising program for first time in college students,* 1(2). Retrieved from http://ras.southtexascollege.edu/files/Research-Brief-Beacon-Case-Management-Impact-Study-revised-10082010.pdf

Stupka, E. (1993). An Evaluation of the Short Term and Long Term Impact a Student Success Course Has on Academic Performance and Persistence.

Taylor, S. E., Scepansky, J. A., Lounsbury, J. W., & Gibson, L. W. (2010). Broad and narrow personality traits of women's college students in relation to early departure from college. *Journal of College Student Retention: Research, Theory & Practice*, *11*(4), 483-497. doi: 10.2190/CS.11.4.c.

Tinto, V. (1987). *Leaving college: Rethinking the causes and cures of student attrition*. Chicago: University of Chicago Press.

Tovar, E. (2015). The role of faculty, counselors, and support programs on Latino/a community college students' success and intent to persist. *Community College Review*, *43*(1), 46-71. doi: 10.1177/0091552114553788.

Turner, P. (2016). Supporting Freshman Males During Their First-Year of College. *College Student Journal*, *50*(1), 86-94.

University 101 (2016), *History of the first university seminar and & the university 101 program*. Retrieved from http://www.sc.edu/univ101/aboutus/history.html

Vallerand, R. J., & Bissonnette, R. (1992). Intrinsic, Extrinsic, and Amotivational Styles as Predictors of Behavior: A Prospective Study. *Journal of Personality*, *60*(3), 599-620. doi:10.1111/1467-6494.ep9209210978.

Wilson, J. H., & Locker Jr, L. (2007). Immediacy scale represents four factors: Nonverbal and verbal components predict student outcomes. *The Journal of Classroom Interaction*, 4-10.

Wilson, J. H., & Ryan, R. G. (2013). Professor–Student Rapport Scale Six Items Predict Student Outcomes. *Teaching of Psychology*, *40*(2), 130-133.

Wilson, J. H., Ryan, R. G., & Pugh, J. L. (2010). Professor-Student Rapport Scale Predicts Student Outcomes. *Teaching Of Psychology*, *37*(4), 246-251. Doi:10.1080/00986283.2010.510976.

Wong, P. T., & Fry, P. S. (1998). The human quest for meaning. *Journal of Adult Development*, *7*, 187-188.

Table 1

Correlations Between Personality Predictors and Dependent Measures

Measure	Actual GPA	Self-Reported GPA	Intention to Withdraw	"I will obtain a bachelor's from this university."	*M*	*SD*
1. BFI- Openness	0.054	0.014	-0.041	-0.088	48.53	7.98
2. BFI-Conscientiousness	.278**	0.181	-.270**	0.167	44.91	6.61
3. BFI-Extraversion	-0.096	-0.083	-.222*	-0.028	35.01	9.08
4. BFI-Neuroticism	-0.181	-0.085	.281**	0.020	31.25	6.66
5. ACS-Commitment	0.114	0.050	-.257**	0.155	24.65	3.67
6. ACS-Satisfaction	0.166	0.100	-.260**	0.138	33.25	6.60
7. ACS- Quality of Alternatives	-0.113	-0.057	.212*	-0.115	12.62	2.83
8. ACS- Investment	.276**	.207*	-.326**	0.185	22.46	4.52
9. ACS-Meaningfulness	0.023	0.010	-.240*	.263**	34.22	7.58
10. Brief Resilience Scale	0.092	0.024	-.241*	-0.008	19.25	4.99
11. Academic Self-Efficacy Scale	.372**	.344**	-.336**	0.138	37.76	5.81
M	3.19	3.18	6.29	5.40		
SD	.65	.70	3.60	1.08		

Note. BFI = Big Five Inventory; ACS = Academic Commitment Scale; * = $p \leq .05$, ** = $p \leq .01$. *N* = 103-109 for all analyses.

Table 2

Correlations Between Motivational Predictors and Dependent Measures

Measures	Actual GPA	Self-Reported GPA	Intention to Withdraw	"I will obtain a bachelor's from this university."	*M*	*SD*
1. AVS-Instrumental Value	0.122	0.068	-.302**	.344**	30.58	3.47
2. AVS-External Pressure	0.024	0.136	-0.150	.237*	32.83	6.40
3. AVS-"No better alternative"	-.241*	-0.159	.209*	-0.143	11.25	5.63
4.AGQ-Mastery Approach	0.124	0.116	-0.158	.190*	12.83	1.92
5. AGQ-Mastery Avoidance	0.029	-0.004	-0.136	0.058	10.77	2.83
6. AGQ-Performance Approach	0.063	0.050	-.252**	0.113	11.55	2.64
7. AGQ-Performance Avoidance	-0.137	-0.111	-.254**	0.140	11.19	2.70
8. SGS-Task-Oriented Climate	0.055	0.017	-.191*	.203*	12.05	2.17
9. SGS-Ability-Oriented Climate	-.313**	-.210*	.198*	-0.079	5.96	1.65
M	3.19	3.18	6.29	5.40		
SD	.65	.70	3.60	1.08		

Note. AVS = Academic Values Scale; AGQ = Academic Goals Questionnaire; SGS = School Goals Questionnaire. * = $p \leq .05$, ** = $p \leq .01$. N = 106-109 for all analyses.

Table 3

Correlations Between Social Predictors and Dependent Measures

Measures	Actual GPA	Self-Reported GPA	Intention to Withdraw	"I will obtain a bachelor's from this university."	*M*	*SD*
1. PSRS-Favorite	0.150	0.122	-0.173	0.077	29.20	3.12
2. PSRS-Least Favorite	0.027	-0.037	-0.131	.190*	16.17	5.84
3. SBS-Peer Influence	.252**	.316**	-.373**	.206*	26.19	6.96
4. SBS-Classroom Comfort	-0.163	-0.173	-0.146	0.063	13.65	4.11
5. SBS-Isolation	-0.187	-.275**	.228*	-.215*	12.27	3.57
6. SBS-Faculty Support	0.151	0.090	-.336**	.191*	35.85	7.67
M	3.19	3.18	6.29	5.40		
SD	.65	.70	3.60	1.08		

Note. PSRS = Professor-Student Rapport Scale; SBS = Sense of Belonging Scale; * = $p \leq .05$, ** = $p \leq .01$. *N* = 105-109 for all analyses.

Table 4

Simultaneous Regression Model Outcomes for Actual GPA

	B	SE B	Beta	*t*	*p*
Social factors					
Constant	2.923	.607		4.816	.< .001
PSRS (Favorite)	.019	.017	.101	1.156	.250
PSRS (Least Favorite)	-.008	.010	-.069	-.791	.430
SBS- Peer Influence	.020	.012	.216	1.688	.094
SBS - Classroom Comfort	-.063	.016	-.408	-3.873	< .001
SBS - Isolation	-.026	.020	-.140	-1.304	.194
SBS - Faculty Support	.015	.010	.180	1.512	.133
R^2 = .120					

Personality factors					
Constant	3.403	.846		4.020	< .001
BFI- Openness	< .001	.007	-.007	-.070	.945
BFI- Conscientiousness	-.003	.011	-.028	-.229	.819
BFI- Extraversion	-.006	.007	-.085	-.830	.408
BFI- Neuroticism	-.020	.010	-.217	-1.912	.059
ACS- Commitment	-.008	.022	-.051	-.379	.706
ACS-Satisfaction	-.009	.016	-.107	-.585	.559
ACS –Quality of Alternatives	-.011	.021	-.054	-.526	.600
ACS -Investment	.030	.021	.234	1.472	.144
ACS - Meaningfulness	-.014	.011	-.196	-1.297	.197
Brief Resilience Scale	-.006	.014	-.047	-.403	.687
Academic Self-Efficacy	.036	.013	.383	2.706	.008
$R^2 = .132$					
Motivational Factors					
Constant	3.735	.695		5.373	< .001
AVS- Instrumental Value	.006	.022	.034	.269	.788
AVS- External Pressure	.006	.012	.056	.473	.638
AVS- "no better alternative"	-.007	.012	-.067	-.632	.529
AGQ- Mastery Approach	.058	.037	.186	1.560	.122
AGQ- Mastery Avoidance	.005	.029	.023	.177	.860
AGQ- Performance Approach	.065	.031	.281	2.069	.041

AGQ-Performance Avoidance	-.098	.034	-.438	-2.892	.005
SGS- Task-Oriented Climate	-.048	.031	-.172	-1.559	.123
SGS- Ability-Oriented Climate	-.112	.038	-.307	-2.983	.004
$R^2 = .141$					

Note. PSRS = Professor-Student Rapport Scale; SBS = Sense of Belonging Scale; BFI = Big Five Inventory; ACS = Academic Commitment Scale; AVS = Academic Values Scale; AGQ = Academic Goals Questionnaire; SGS = School Goals Questionnaire.

Table 5

Simultaneous Regression Model Outcomes for Self-Reported GPA

	B	SE B	Beta	*t*	*p*
Social factors					
Constant	3.079	.631		4.879	< .001
PSRS (Favorite)	.019	.017	.094	1.120	.265
PSRS (Least Favorite)	-.012	.010	-.106	-1.257	.211
SBS- Peer Influence	.027	.012	.285	2.299	.023
SBS - Classroom Comfort	-.065	.017	-.402	-3.934	< .001
SBS - Isolation	-.033	.020	-.178	-1.675	.096
SBS - Faculty Support	.010	.010	.120	1.042	.299
$R^2 = .170$					

Personality factors					
Constant	3.343	.922		3.625	< .001
BFI- Openness	-.003	.008	-.041	-.419	.676
BFI- Conscientiousness	-.009	.012	-.090	-.742	.460
BFI- Extraversion	-.001	.008	-.015	-.140	.889
BFI- Neuroticism	-.016	.011	-.167	-1.430	.156
ACS- Commitment	-.017	.024	-.094	-.688	.493
ACS-Satisfaction	-.011	.017	-.116	-.622	.535
ACS –Quality of Alternatives	< .001	.022	-.001	-.011	.991
ACS -Investment	.023	.022	.163	1.012	.314
ACS - Meaningfulness	-.012	.012	-.146	-.955	.342
Brief Resilience Scale	-.011	.016	-.083	-.691	.491
Academic Self-Efficacy	.048	.014	.479	3.401	.001
$R^2 = .088$					
Motivational Factors					
Constant	3.883	.772		5.031	< .001
AVS- Instrumental Value	-.020	.024	-.105	-.836	.405
AVS- External Pressure	.027	.012	.260	2.190	.031
AVS- "no better alternative”	-.008	.013	-.065	-.596	.553
AGQ- Mastery Approach	.062	.041	.181	1.493	.139
AGQ- Mastery Avoidance	-.016	.031	-.068	-.507	.614
AGQ- Performance Approach	.053	.034	.212	1.544	.126

AGQ-Performance Avoidance	-.080	.037	-.329	-2.141	.035
SGS- Task-Oriented Climate	-.053	.034	-.176	-1.562	.122
SGS- Ability-Oriented Climate	-.091	.042	-.229	-2.181	.032
$R^2 = .090$					

Note. PSRS = Professor-Student Rapport Scale; SBS = Sense of Belonging Scale; BFI = Big Five Inventory; ACS = Academic Commitment Scale; AVS = Academic Values Scale; AGQ = Academic Goals Questionnaire; SGS = School Goals Questionnaire.

Table 6

Simultaneous Regression Model Outcomes for Intention to Withdraw

	B	SE B	Beta	*t*	*p*
Social factors					
Constant	11.717	3.487		3.360	.001
PSRS (Favorite)	-.150	.096	-.135	-1.571	.119
PSRS (Least Favorite)	.016	.054	.025	.292	.771
SBS- Peer Influence	-.042	.064	-.082	-.649	.518
SBS - Classroom Comfort	-.001	.091	-.001	-.006	.996
SBS - Isolation	.206	.109	.205	1.879	.063
SBS - Faculty Support	-.088	.055	-.186	-1.581	.116
$R^2 = .132$					

Personality factors					
Constant	16.072	4.994		3.218	.002
BFI- Openness	.033	.042	.069	.793	.429
BFI- Conscientiousness	-.059	.063	-.102	-.928	.356
BFI- Extraversion	-.076	.041	-.175	-1.842	.068
BFI- Neuroticism	.101	.061	.174	1.653	.101
ACS- Commitment	-.096	.131	-.090	-.729	.467
ACS-Satisfaction	.001	.093	.001	.006	.995
ACS –Quality of Alternatives	.051	.120	.040	.424	.673
ACS -Investment	-.081	.121	-.097	-.671	.504
ACS - Meaningfulness	-.016	.066	-.034	-.244	.808
Brief Resilience Scale	-.046	.085	-.058	-.536	.593
Academic Self-Efficacy	-.107	.076	-.178	-1.400	.164
$R^2 = .259$					
Motivational Factors					
Constant	14.590	4.186		3.485	.001
AVS- Instrumental Value	-.215	.129	-.208	-1.668	.099
AVS- External Pressure	-.008	.066	-.014	-.119	.906
AVS- "no better alternative"	.051	.071	.077	.709	.480
AGQ- Mastery Approach	.085	.224	.045	.378	.707
AGQ- Mastery Avoidance	-.093	.171	-.072	-.545	.587
AGQ- Performance Approach	-.122	.185	-.089	-.659	.512

AGQ-Performance Avoidance	-.163	.202	-.123	-.806	.423
SGS- Task-Oriented Climate	-.082	.184	-.050	-.445	.657
SGS- Ability-Oriented Climate	.346	.225	.160	1.539	.127
$R^2 = .107$					

Note. PSRS = Professor-Student Rapport Scale; SBS = Sense of Belonging Scale; BFI = Big Five Inventory; ACS = Academic Commitment Scale; AVS = Academic Values Scale; AGQ = Academic Goals Questionnaire; SGS = School Goals Questionnaire.

Table 7

Simultaneous Regression Model Outcomes for Likelihood to Earn a Degree

	B	SE B	Beta	*t*	*p*
Social factors					
Constant	4.286	1.146		3.740	< .001
PSRS (Favorite)	.014	.031	.040	.446	.657
PSRS (Least Favorite)	.024	.018	.120	1.333	.185
SBS- Peer Influence	-.001	.021	-.006	-.042	.966
SBS - Classroom Comfort	-.030	.030	-.110	-.999	.320
SBS - Isolation	-.037	.036	-.117	-1.025	.307
SBS - Faculty Support	.034	.018	.230	1.866	.064
$R^2 = .042$					

Personality factors					
Constant	2.768	1.661		1.666	.099
BFI- Openness	-.010	.014	-.076	-.752	.454
BFI- Conscientiousness	.006	.021	.037	.293	.770
BFI- Extraversion	< .001	.014	-.001	-.008	.994
BFI- Neuroticism	.020	.020	.121	.984	.327
ACS- Commitment	.026	.044	.087	.605	.546
ACS-Satisfaction	-.040	.031	-.254	-1.298	.197
ACS –Quality of Alternatives	.010	.040	.029	.262	.794
muli ACS - Investment	.022	.040	.090	.535	.594
ACS - Meaningfulness	.040	.022	.293	1.829	.070
Brief Resilience Scale	.023	.028	.103	.818	.415
Academic Self-Efficacy	.012	.025	.070	.476	.635
R^2 = ..001					
Motivational Factors					
Constant	2.180	1.308		1.666	.099
AVS- Instrumental Value	.082	.040	.259	2.028	.045
AVS- External Pressure	.017	.021	.101	.841	.402
AVS- "no better alternative”	-.015	.022	-.075	-.680	.498
AGQ- Mastery Approach	.010	.070	.018	.149	.882
AGQ- Mastery Avoidance	-.001	.053	-.002	-.015	.988
AGQ- Performance Approach	-.062	.058	-.148	-1.065	.290

AGQ-Performance Avoidance	.050	.063	.124	.794	.429
SGS- Task-Oriented Climate	.038	.058	.075	.660	.511
SGS- Ability-Oriented Climate	-.021	.070	-.032	-.305	.761
$R^2 = .064$					

Note. PSRS = Professor-Student Rapport Scale; SBS = Sense of Belonging Scale; BFI = Big Five Inventory; ACS = Academic Commitment Scale; AVS = Academic Values Scale; AGQ = Academic Goals Questionnaire; SGS = School Goals Questionnaire.

Table 8

Inter-Dependent Correlations Matrix

	Self-Reported GPA	Intention to Withdraw	"I will obtain a bachelor's from this university."
Actual GPA	.976**	-.255**	0.027
Self-Reported GPA		-0.170	-0.031
Intention to Withdraw			-.247**

Note. * = $p \leq .05$, ** = $p \leq .01$. N = 107-109 for all analyses.

Appendix A

Demographics Questions

Please answer the following demographic questions:

What is your age?

What is your gender?

- ❍ Male
- ❍ Female

What is your race/ethnicity?

- ❍ American Indian or Alaska Native
- ❍ Asian
- ❍ Black/African-American
- ❍ Hispanic or Latino
- ❍ Native Hawaiian or Pacific Islander
- ❍ White/Caucasian
- ❍ Biracial

What is your academic year?

- ❍ First-year (0 - 29.99 credit hours earned)
- ❍ Sophomores (30 - 59.99 credit hours earned)
- ❍ Juniors (60 - 89.99 credit hours earned)
- ❍ Seniors (90 or more credit hours earned)

What is your major? If you are pursuing a dual major, please select the degree you consider your primary focus.

- ❍ Accounting
- ❍ Anthropology
- ❍ Art
- ❍ Athletic Training
- ❍ Biology
- ❍ Chemistry
- ❍ Child and Family Development
- ❍ Civil Engineering
- ❍ Communication Studies
- ❍ Computer Science
- ❍ Construction Management
- ❍ Early Childhood Education
- ❍ Economics
- ❍ Electrical Engineering
- ❍ English
- ❍ Exercise Science
- ❍ Fashion Merchandising and Apparel Design
- ❍ Finance
- ❍ General Studies
- ❍ Geography
- ❍ Geology
- ❍ Graphic Design
- ❍ Health and Physical Education
- ❍ Health Education and Promotion
- ❍ History
- ❍ Information Systems
- ❍ Information Technology
- ❍ Interior Design
- ❍ International Studies
- ❍ International Trade
- ❍ Journalism
- ❍ Justice Studies
- ❍ Logistics and Intermodal Transportation
- ❍ Management
- ❍ Manufacturing Engineering
- ❍ Marketing
- ❍ Mathematics
- ❍ Mechanical Engineering

- ❍ Middle Grades Education
- ❍ Modern Languages
- ❍ Multimedia Film & Production
- ❍ Music
- ❍ Music Education
- ❍ Nursing
- ❍ Nutrition and Food Science
- ❍ Philosophy
- ❍ Physics
- ❍ Political Science
- ❍ Psychology
- ❍ Public Relations
- ❍ Recreation
- ❍ Sociology
- ❍ Special Education
- ❍ Sport Management
- ❍ Theatre
- ❍ Writing & Linguistics
- ❍ Not Listed

Are you a first-generation college student?

- ❍ Yes
- ❍ No

When you consider your childhood, rate your perception of your parents' financial situation. Please move the slider below to select your answer.

Please indicate the level of education attained by your parents.

	Did Not Complete High-School	High-School Graduate	Associate's Degree	Bachelor's Degree	Master's Degree	Doctoral Degree	N/A
Mother's Education	❍	❍	❍	❍	❍	❍	❍
Father's Education	❍	❍	❍	❍	❍	❍	❍

Have you attended other colleges prior to Georgia Southern University?

- ❍ Yes
- ❍ No

Please rate your attitude toward Georgia Southern University. Please move the slider below to select your answer.

If you are planning to attend graduate school, what is the highest degree are you planning to pursue?

- ❍ Post-Bacc certificate
- ❍ Masters degree
- ❍ Doctoral degree

Are you a university honors student?

- ❍ Yes
- ❍ No

Do you participate in Greek Life?

- ❍ Yes
- ❍ No

If you are a student athlete, are you a member of an official Georgia Southern Athletic team or a club sport/intramural sport team participant?

- ❑ I am a member of a Georgia southern University Athletic team.
- ❑ I am a member of one or more Georgia Southern University club/intramural sports teams.
- ❑ I am neither a member of a Georgia Southern University Athletic team nor am I a member of a club sport/ intramural sport team.

Did you take a First-Year Experience course?

- ❍ Yes
- ❍ No

Please indicate your current GPA. Please move the slider below to select your answer.

Appendix B

Informed Consent Page and Eagle ID Collection Form

COLLEGE OF LIBERAL ARTS AND SOCIAL SCIENCES

DEPARTMENT OF PSYCHOLOGY

College Performance

My name is Robert Altman, and I am a graduate student pursuing my Masters in Experimental Psychology at Georgia Southern University. This study is being conducted to complete the thesis requirement for the Master's degree. The purpose of this study is to examine the social, personality, institutional, motivational, and demographic variables which contribute to student graduation rates and academic success. Furthermore, it will hopefully integrate graduation rates and academic success as measures of academic outcomes. The faculty mentor is Dr. Janie Wilson, a professor in the Psychology Department.

This research includes several surveys. Please take your time and answer items honestly and to the best of your ability. Participation in this study is expected to take no more than 45 minutes. Please note that you may choose to withdraw from the study at any time without penalty. All participants who complete the study will be compensated with 1 credit of research participation.

The results of this study are intended to promote greater understanding of the factors which promote graduation from an undergraduate institution as well as academic performance. Participation in studies helps students learn about the research process during their undergraduate career. The results should also help faculty and staff to gain a greater understanding of student success.

We ask that you allow us to look up your GPA so we can analyze the data with your current GPA. We ask that you please provide consent for us to look up your GPA on WINGS and use it as a measure of academic success. In order to ensure your confidentiality, only the Primary Investigator and Faculty Advisor will have access to the data collected in this study and any personally identifying information. After obtaining your GPA from WINGS, your identifying information (Eagle ID number) will be deleted from your survey responses. You will not be identified by name in any reports using information obtained from this study.

Participants have the right to ask questions and have those questions answered. If you have questions about this study, please contact the researcher named above or the researcher's faculty advisor. Contact information for these individuals is located at the end of this form. For

questions concerning your rights as a research participant, contact Georgia Southern University Office of Research Services and Sponsored Programs at 912-478-5465.

Your participation in this study is voluntary. You may terminate participation at any time by exiting the survey. You may choose not to answer any questions that you find uncomfortable. There is no penalty for terminating your participation in this study.

You must be 18 years of age or older to consent to participate in this research study. If you consent to participate in this research study and to the terms above, please click the button that says "I Agree."

This project has been reviewed and approved by the GSU Institutional Review Board under tracking number: H16454.

Title of Project: College Performance

Principal Investigator: Robert Altman

Department of Psychology

Ra01989@georgiasouthern.edu

Faculty Advisor: Janie H. Wilson, PhD

Department of Psychology

912-478-5580

JHWilson@georgiasouthern.edu

*By selecting "yes" below, you indicate that you have read and understand this informed consent document and are indicating your willingness to participate in this study.

- ❍ Yes, take me to the study.
- ❍ No, terminate my participation.

Thank you for taking the time to complete this study. Please begin by inputting your name and Eagle ID number below.

As a reminder: "We ask that you allow us to look up your GPA so we can analyze the data with your current GPA. We ask that you please provide consent for us to look up your GPA on WINGS and use it as a measure of academic success. In order to ensure your confidentiality, only the Primary Investigator and Faculty Advisor will have access to the data collected in this study and any personally identifying information. After obtaining your GPA from WINGS, your identifying information (Eagle ID number) will be deleted from your survey responses. You will not be identified by name in any reports using information obtained from this study."

Eagle ID (900_ _ _ _ _ _)

Appendix C

Debriefing Page

Thank you for taking the time to complete this survey. In order to confirm your completion and receive credit for your participation, please send an email to ra01989@georgiasouthern.edu. As a reminder: We plan to use your Eagle ID to look up your GPA so we can analyze the data with your current GPA as a measure of academic success. In order to ensure your confidentiality, only the Primary Investigator and Faculty Advisor will have access to the data collected in this study and any personally identifying information. After obtaining your GPA from WINGS, your identifying information (Eagle ID number) will be deleted from your survey responses. You will not be identified in any reports using information obtained from this study.