THE H-FACTOR AND THE MODERATING ROLE OF PSYCHOLOGICAL CAPITAL IN PREDICTING STUDENT RETENTION

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Abstract: Nobody wins when a student drops out of college. Colleges lose revenue and students accumulate debt and experience lower lifetime earnings if they never finish college. Colleges and universities have spent an enormous amount of resources to solve the retention problem by focusing on data they have at their disposal (e.g., socioeconomic status, GPA) with some success. I take a different approach and examine the psychological variables most likely to explain why someone may leave college. Specifically, I examine how honesty-humility (the H-Factor), a personality variable, and psychological capital influence student retention. The H-Factor may be important to retention because those high in the H-Factor are ethical, unpretentious, self-aware, able to adjust both academically and socially, and have realistic expectations about college. Psychological capital may be important to retention because those who are high in psychological capital have a more positive outlook on life, believe in themselves, and are resilient. I collect data on honesty-humility, emotionality, extraversion, agreeableness, conscientiousness, and openness to new experiences; (Ashton & Lee, 2004), psychological capital (Luthans et al., 2007), and retention from 455 freshman college business students at a midwestern university. The results show that the direct relationship between the H-Factor and retention is not statistically significant and neither was psychological capital a statistically significant moderator; therefore, my hypotheses were not supported.

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CHAPTER 1

INTRODUCTION

Those without a college degree earn significantly less than those with a college degree (Carnevale, Rose, & Cheah, 2013). Lifetime earnings for those with a bachelor's degree are $2.8 million, 84% higher than a high school graduate's earnings (Carnevale et al., 2013). In addition to lower lifetime earnings, students who drop out face other obstacles like high student debt. Total student debt now exceeds $1 trillion (Denhart, 2013). In the two-year period of 2015- 2016, thirty seven percent of student borrowers drop out of college, which creates a heavy financial burden and no degree (Barshay, 2017).

The college drop-out rate is also a problem for academic institutions. Colleges lose $16.5 billion annually due to student attrition (Raisman, 2013). This revenue loss has elevated the importance and allocation of resources to improve student retention. Seventy percent of four-year universities have at least one person devoted to student retention, and those efforts have resulted in increased retention (Habley, Valiga, McClanahan, & Burkum, 2010). According to the National Student Clearinghouse (2017), overall freshman retention has edged up, from around 59% for those students starting in fall 2009

to 61% for those students starting in fall 2015. The retention rates for all full-time students are also trending higher, moving from 70% for students starting in fall 2009 to 73.8% for students starting in fall 2015. Although the trends are moving in the right direction, the longer-term issue of whether a student stays in college and graduates paints a bleak picture. According to the National Student Clearinghouse (2018), for those first time, full-time degree-seeking students who started at an institution in fall 2011, only 37.5% graduate in four years at that same institution; only 52.2% graduate in six years. This raises the question of what might be missing with regard to our understanding of student retention.

The characteristics required for academic *success* have been studied extensively. It is clear that cognitive factors are the best predictors of first-year college GPA and include high school GPA and college entrance exam scores (such as the ACT and SAT; e.g., Bridgeman, Pollack, & Burton, 2008; Kobrin, Patterson, Shaw, Mattern, & Barbuti, 2008; Mattern, Patterson, Shaw, Kobrin, & Barbuti, 2008; Patterson & Mattern, 2013; Sawyer, 2010; Westrick, Le, Robbins, Radunzel, & Schmidt, 2015). Noncognitive predictors of academic success include personal, social, and institutional issues (Levitz, Noel, & Richter, 1999), personality (Noftle & Robins, 2007; Poropat, 2009), and psychological capital that students apply based on different experiences (Luthans, Luthans, & Jensen, 2012). For example, research shows that certain personality traits such as conscientiousness are predictors of GPA (e.g., Chamorro-Premuzic & Furnham, 2003; Noftle & Robins, 2007; O'Connor & Paunonen, 2007; Poropat, 2009). However, I argue that personality adds more value as a predictor of retention than for GPA because personality should be more conceptually aligned with psychological capital and the coping mechanisms that are more proximal to the capacity to stay in college.

Although an understanding of personality gives a baseline assessment of students who may be at risk for dropping out, a student's application of positive psychological capital may explain how personality predicts student retention. This interplay between personality and positive psychological capital are important because personality traits tend to be distal predictors of behavior, consistent over time, and difficult to change; but psychological resources are more dynamic and change based on experiences (Luthans, Avolio, Avey, & Norman, 2007). Psychological resources are more mutable to situations encountered in college and might explain the link of personality to student retention (Luthans, Luthans, & Palmer, 2016).

The literature reveals that personality factors have incremental and independent effects on academic outcomes (e.g., Credé & Kuncel, 2008; Noftle & Robbins, 2007; Robbins, Lauver, Le, Davis, Langley, & Carlstrom, 2004; Sackett, Borneman, & Connelly, 2008). The Five Factor Model (FFM), which consists of extraversion, agreeableness, conscientiousness, neuroticism, and openness to new experience, is the most popular model to assess academic success (e.g., Lievens, Ones, & Dilchert, 2009; Poropat, 2009) and job performance (e.g., Costa & McCrae, 1985; Hurtz & Donovan, 2000). Despite the popularity of the FFM, there have been criticisms. The HEXACO Model (Ashton & Lee, 2007) utilizes a new cross-cultural lexical approach, modifying two factors within the FFM − agreeableness and neuroticism − and adds a sixth factor called honesty-humility, or the H-Factor.

The HEXACO Model may add value to our understanding of student retention because it provides insight into incoming students' personality traits. However, just assessing personality may not tell the whole picture. Students encounter a wide range of new experiences and environments and must learn how to navigate these new situations. Positive

psychological capital can be applied in these situations to create favorable outcomes (Luthans et al., 2016). For example, students who are more hopeful, believe they can accomplish their goals, and have the resilience to persevere in the face of difficulty may do better. These students also tend to be more engaged and are more likely to reach their potential. Psychological capital may have a positive effect on retention because students who apply these resources feel they should be in college, they are resilient in the face of setbacks, and they have an optimistic outlook. Taken together, the HEXACO Model and the Psychological Capital Model further our understanding of retention over and above cognitive factors.

Therefore, the primary objective of the present study is to investigate the relationship between personality, psychological capital, and student retention. My research will contribute to the literature in at least three ways. First, the extant literature focuses on how cognitive factors such as high school GPA and college entrance exams affect college academic performance measures such as GPA. Although GPA is important to retention, there may other factors that provide new knowledge in our understanding of why students stay in college. For example, a student may achieve a low GPA but continue to persist and graduate because they have a positive outlook on life and are able to persevere in spite of difficulty.

Second, most literature on personality and academic performance was developed using the FFM. A gap in the FFM is its inability to account for the H-factor and consider cross-cultural differences among students. The H-Factor is considered important in an academic setting and may be positively related to retention. Students who are high on the H-factor have a more realistic view of what they can and can't do, making it more likely they would seek help when they need it. Knowing when and how to seek help could mitigate feelings of loneliness and frustration. High H-factor students are community driven, helpful, and

unselfish, making it easier to integrate into the social and academic fabrics of the university (Ashton & Lee, 2007).

Third, I will introduce a moderating variable, positive psychological capital, which is a higher order construct inclusive of hope, self-efficacy, resilience, and optimism (Luthans et al., 2007; Luthans et al., 2016) and hypothesize that high psychological capital will strengthen the relationship between personality and retention. Students who apply positive psychological capital may be better able to adapt to the new experiences and situations of first-year college life. This ability to adapt effectively may be an enabler and motivation for the student to stay in school.

CHAPTER II

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Theoretical Background

Early theories of college student retention generally agree that academic and social integration are critical elements that positively affect retention. However, there are distinct perspectives on how student integration happens. The interactionist model of student departure (Tinto, 1975) theorizes that a student's commitment to the university and commitment to earn a college degree are central to staying in school. Tinto posits that if students are socially and academically integrated into the university, they will be more committed; and commitment leads to staying in school. In later revisions to his model, Tinto (1993) incorporated three phases of transition students encounter going from high school to college, the stressors students experience, and how those stressors extend and affect the college experience.

Astin (1984) presented a theory of student involvement in which student retention is directly related to the amount of effort, both mental and physical, a student expends on campus. Astin's theory of involvement focuses more on behavior. In other words, "what the individual does [versus] what the individual thinks or feels" (Astin, 1984, p. 519).

Although Astin and Tinto focus on the academic domain and student integration, Bean (1983) develops a model of student departure borrowing from the organizational turnover literature (Price & Mueller, 1981). Bean theorizes that the same process employees go through to determine whether they want to leave a company are similar to the process students go through when deciding to stay or leave an academic institution (Bean, 1983). According to Bean, the decision to stay or leave an organization or school is based on what a student or employee intends to do. These intentions are formed by experiences. The aggregate of these experiences forms a belief system about college, and these beliefs lead to a mindset that results in either staying or leaving a company or university.

Bean extends his previous model from 1983 to develop a psychological model of student attrition (Bean & Eaton, 2001). Although previous models focus heavily on what institutions can do, the Bean and Eaton model focuses on the individual. In this model, academic and social integration results both from a student's incoming psychological makeup and the changes that happen to that psychological makeup once the student experiences the academic environment. The model states that students come into college with experiences, beliefs, and assessment of their abilities that form their psychological profile. This psychological profile is made up of more fixed traits and forms the student's baseline beliefs about college (Bean & Eaton, 2001).

Once students are in college, they encounter new environmental stimuli that either reinforce or change their incoming beliefs (Bean & Eaton, 2001). The new college environment contains those things that are both internal to the university and external to the university. These include how to navigate a new academic environment, including class subjects, instructor teaching styles, and academic rigor. It also includes other things students

must navigate through such as processes of registering and paying for classes, awareness and usage of on-campus resources such as academic advising, library services, tutoring, and writing centers. All these experiences together form new beliefs about self-efficacy (what a student believes about his or her abilities; Bandura, 1977), coping strategies (the ongoing process of adapting to a new situation or environment based on a person's need compared to what the environment gives; French et al., 1974), and locus of control (whether a student believes his outcome is controlled by him or by external forces; Rotter, 1966). These three factors − self-efficacy, locus of control, and coping strategies − determine whether a student integrates academically and socially (Bean & Eaton, 2001).

The Bean and Eaton (2001) psychological model of student retention informs my research. In Bean's model, students enter a university with a certain psychological profile made up of individual differences such as personality and experiences. Personality traits may give an indication of who might be at risk for dropping out, but it does not account for psychological capital students may employ to either lessen the risk of dropping out or increase that risk (Luthans et al., 2007). As students experience the college environment, they use a variety of psychological resources to cope with new situations (Bean & Eaton, 2001). To assess potential psychological resources, I will measure psychological capital, which includes the factors self-efficacy, hope, optimism, and resilience (Luthans et al., 2007).

Hypothesis Development

Despite early skepticism and a lack of validity of personality assessments for predicting job performance (Schmitt, Gooding, Neo, & Kirsch, 1984), more recent research reveals that personality assessments do significantly predict job performance (Barrick, 2005; Ones, Viswesvaran, & Dilchert, 2005). Although most research on the predictive validity of

personality comes from the organizational sciences, recently there has been a focus on research in the academic domain (e.g., Conrad, 2006; Komarraju, Karau, & Schmeck, 2009; Lievens et al., 2009; Lounsbury, Saudargas, & Gibson, 2004; Noftle & Robins, 2007) using the FFM (Costa & McCrae, 1985). Although the FFM has been useful in understanding how personality affects academic performance, I posit that the HEXACO Model will be superior than the FFM for several reasons. First, the FFM was developed in a way that did not capture cross-cultural differences in the manifestation of the main personality traits. The Ashton and Lee (2007) research on personality across cultures revealed a sixth trait, the H-Factor, and realignment of some sub-facets within the traits of agreeableness and emotionality. The HEXACO Model consists of (H) honesty-humility, (E) emotionality, (X) extraversion, (A) agreeableness, (C) conscientiousness, and (O) openness to new experiences (Ashton & Lee, 2007). Researchers have found that with the addition of the H-Factor, the HEXACO Model can explain incremental variance in GPA over the FFM (Ashton & Lee, 2007).

Key Differences Between the FFM and HEXACO

The FFM evolved from two separate personality theories (Ashton & Lee, 2005). Three traits − neuroticism, extraversion, and openness – were from the Cattell, Eber, and Tatsuika (1970) 16 Factor Model. The other two traits – agreeableness and conscientiousness – were adopted from the work of Digman and Takemoto-Chock (1981) and Goldberg (1983).

The key difference between the HEXACO Model and the FFM is the lexical approach used to develop the models. The FFM used an English-centric approach, adopting words and meanings that are well known in the United States but may be interpreted differently in other countries (Ashton & Lee, 2007). The most widely used survey to assess the five factors, the NEO-PI (Costa & McCrae, 1985), is administered only in the English language and also does

not account for different cultural interpretations. Overall, the English-centric approach used in the FFM created gaps and inconsistencies in cross-cultural interpretations.

The HEXACO Model was developed and tested using local lexicons in 12 countries; as a result, the H-Factor emerged in factor analysis as a sixth major personality dimension (Ashton & Lee, 2007). This cross-cultural lexical approach also revealed shifts in the traits of agreeableness and neuroticism within the FFM (Ashton & Lee, 2005). The narrow traits of straightforwardness and modesty that resided within the trait of agreeableness in the FFM performed significantly better when placed under the H-Factor in the HEXACO Model (Ashton & Lee, 2007). In addition, there were some realignments with two of the FFM factors, neuroticism and agreeableness. Ashton et al. (2004) found that sentimentality fit better in the agreeableness trait as opposed to neuroticism, and anger fit better in the neuroticism trait rather than the agreeableness trait. Last, the neuroticism trait within the FFM was seen as a negative representation. As a result, Ashton & Lee (2007) changed the more negative representation of neuroticism within the FFM to a more positive representation – emotionality – in the HEXACO Model. The trait emotionality now includes anger, and the trait agreeableness now includes sentimentality (Ashton & Lee, 2007). The other 3 traits were similar between the two models. Conscientiousness, extraversion, and openness to new experiences were highly correlated (r=.7, r=.74, .76 respectively) and therefore these traits remained consistent between the FFM and HEXACO. (Ashton & Lee, 2007 Empirical, theoretical and practical advantages, (Ashton, Lee, De Vries, 2014).

The H-Factor and Student Retention

Ashton and Lee found that the H-Factor is a higher order personality domain with sub-facets of sincerity, fairness, modesty, and greed avoidance. Those high on the H-Factor

benefit from reciprocal cooperation, a mindset that welcomes shared exchanges, and a sense of open-mindedness that facilitates learning. Students who exhibit a high H-Factor are welcoming and make others feel comfortable. They tend to be unpretentious, trustworthy, and have a strong conviction toward fairmindedness. Those who score high on the H-Factor know what they can and can't do, and they are more likely to admit their mistakes (Tangney, 2000). Those who score low on the H-Factor impose a cost on others. Specifically, students low on the H-Factor are self-centered and tend to exploit others for personal gain, resulting in a win-lose outcome. They have a high sense of entitlement, are antagonistic, have no sense of fairness, and tend to be greedy (Ashton & Lee, 2007).

The H-Factor can also be thought of as having interpersonal and intrapersonal components (Tangney, 2000). From an intrapersonal point of view, those high in the H-Factor have a realistic view of themselves, what their strengths and weaknesses are, and are willing to put in the effort to improve (Davis et al., 2013). From an interpersonal point of view, the H-Factor contains a relational component as well (Davis et al., 2013). Those who are humble tend to form better relationships, are more easily accepted into groups, and are better able to forgive others when things go wrong (Davis et al., 2013).

To date, the only research of which I am aware using the HEXACO in academic settings is with predicting academic success defined as GPA. De Vries, de Vries, and Born (2011) use the HEXACO Personality Inventory to determine the impact of HEXACO on academic outcomes (GPA and counterproductive behavior). Specifically, they find that personality traits conscientiousness and the H-Factor had the strongest correlations with GPA and explain significant incremental variance in GPA over and above extraversion, emotionality, agreeableness, and openness to experience. In addition, using relative weights analysis,

conscientiousness and the H-Factor accounted for 84.1% of the total variance in GPA explained by personality.

Given the conceptual definition of the H-Factor and prior research with GPA, I argue that the H-factor should also be related to student retention. The H-Factor is hypothesized to be positively related to retention because high H-Factor students are interested in the greater good of their social groups rather than themselves, resulting in healthier relationships. They also have an honest view of themselves, are aware of when they are in distress, and recognize when they need to seek help from professors or take advantage of other resources on campus (Ashton & Lee, 2007). High H-Factor students are more likely to get involved and engage in group activities on campus which, based on the Bean and Eaton (2001) theory, should also help them become embedded in the university. Academically, high H-Factor students are likely to be team players and promote cross-collaboration on projects. Those who score higher in the H-Factor are seen as authentic, trustworthy, and inclusive. Socially, they may be the type of students whom other students seek out for friendship and social interaction, they may be the unifier in a group by promoting different points of view, and are more likely to reach out to help others with difficult school assignments (Davis et al., 2013).

On the other hand, students low on the H-Factor may be less likely to stay for several reasons. Students who score low on H-Factor are often perceived as self-centered and not trustworthy, which could lead to difficulty with social relationships. They risk being alienated or may be ostracized by their peers. Low H-Factor students are more likely to deceive and exploit others for personal gain, and so fellow students begin to distance themselves. Over time, this alienation may cause a low H-Factor student to become actively disengaged and dejected to the point of dropping out. Ashton, Lee, and DeVries (2014) find

that those with low scores on the fairness scale are more likely to cheat and take advantage of situations for personal gain. Those students who cheat and get caught risk being expelled. Whether a student is sincere and authentic may also affect whether he/she stays in school. Students who score low on sincerity manipulate others and use flattery to get what they want. While this may be an effective strategy in the short term, over time students and faculty recognize their lack of trustworthiness and start to distance themselves from the manipulative student. Students who exhibit greed go out of their way to show off and flaunt materialistic things (Ashton et al., 2014). They tend to think they are better than everyone else and want others to know it. Those who score low on greed avoidance may not be able to focus on school work as they put all their energy into displaying wealth and privilege (regardless of whether it's true), resulting in loss of focus on school work (Ashton et al., 2014). Another reason a student may drop out is because they have a high sense of entitlement. Those who are extremely entitled are self-centered, arrogant, and believe they should be treated specially. This type of attitude in a university setting may become frustrating to students who score low on modesty because they are one in a larger community and as such need to integrate into both social and classroom situations similarly to other students. This frustration over time may feed negative emotions and attitudes towards school such that the student eventually drops out.

Hypothesis 1: The H-Factor is positively related to retention.

Control Variable: Conscientiousness

Although the primary focus of the present study is on understanding how the H-factor might relate to retention, conscientiousness has received research attention and is the strongest personality predictor of academic performance (GPA; e.g., Chamorro-Premuzic &

Furnham, 2003; Conrad, 2006; Noftle & Robins, 2007). In addition, Alarcon and Edwards (2013) find that conscientiousness is a significant predictor of student retention. Therefore, I will compare the predictive validity of conscientiousness and the H-factor. Conscientious students are able to organize their work, are hard-working, and get things done on time with a high degree of accuracy and attention to detail (e.g., Ashton et al., 2004; Ashton & Lee, 2007; Barrick & Mount, 1991). Those who are more organized may be more likely to stay in school because they are able to plan out their schoolwork and prepare for assignments and exams (Ashton & Lee, 2004). Conscientious students have a strong work ethic (Ashton et al., 2004). They are able to face problems head on and develop strategies, spending the time to solve these problems. Therefore, a conscientious student may seek out the needed resources and get help with assignments that are too difficult for the student to solve on their own. Conscientious students are more likely to accept the goals that professors set for the class (Hough & Schneider, 1996). All of these qualities together help students cope with the daily stresses of college life.

I expect that conscientiousness will be positively related to retention but that the H-Factor should explain significant incremental variance because those high in the H-Factor may be more socially and academically integrated in their college environments, which are critical factors for staying in school (Tinto, 1993).

Hypothesis 2: The H-Factor will be positively related to retention over and above conscientiousness.

Most prior research using personality to predict academic performance uses GPA as the criterion variable. Although GPA might predict retention, not all students with high GPAs stay in school; conversely, not all low GPA students leave school. I propose that the H-Factor

explains variance in retention over and above GPA. Those high in the H-factor are honest with themselves, do the best they can, and may be focused on learning rather than just earning a grade. High H-Factor students are likeable; therefore, they find it easier to integrate into social networks critical for support even if their grades are foundering. In contrast, the potential for alienating other students and how they are perceived by others may create an environment in which students low on the H-factor leave school, even with strong grades, because they have difficulty becoming embedded in the larger community and lack the connectedness and sense of belonging that are critical to staying.

Hypothesis 3: The H-Factor will be more strongly related to retention than GPA.

Psychological Capital and Retention

Although I predict a direct positive relationship between the H-factor and retention, it is critical to document why the H-factor is related to retention. The theoretical model above points to several potential explanations for the predicted relationship. One obvious common theme throughout my conceptual development and that of Bean and Eaton (2001) is that students who stay in school do so because they have the resources to cope well with their environment and become embedded in the larger social community for support. As such, I propose that students higher on the H-factor stay in school because they are better able to utilize resources such as positive psychological capital. Psychological capital was proposed as a higher-order factor representing the positive affective states hope, self-efficacy, resilience, and optimism (Luthans et al., 2007). Studies show that psychological capital is positively related to work performance (Avey, Reichard, Luthans, & Mhatre, 2011) and GPA (Luthans et al., 2007). Students with high psychological capital are able to adjust and cope better, which may contribute to positive outcomes. Psychological capital is considered a

malleable “state” containing psychological resources that can be applied or can change depending on situations and experiences (Luthans et al., 2007). The adjustment process requires activating certain emotional responses that change based on the situation such that higher scores on state variables may change the trajectory of a direct relationship between personality and retention. This is not unprecedented as studies show positive relationships between one or more state-like characteristics and academic performance. For example, self-efficacy (e.g., Bandura, 1997; Chemmers, Hu, & Garcia, 2001) and optimism are shown to have a positive relationship with academic performance (e.g., Scheier2001).

Although no prior research investigates the relationship between psychological capital, as a higher-order construct, and retention, there is ample prior research involving the individual sub-facets of psychological capital. For example, using social cognitive theory, Bandura (1997) demonstrates that academic self-efficacy predicts academic performance (higher grades and test scores such as the GRE) because students believe they have the ability to be successful in class (Bandura, 1997). Those who are higher in academic self-efficacy are better time managers and are able to adjust to different classroom environments and feel comfortable participating (Chemmers et al., 2001). Optimism has also been shown to be positively related to academic success. Optimism reflects a positive outlook on life in spite of adversity in challenging situations (Scheier et al., 2001). In an academic environment, students are faced with new and uncomfortable situations that may result in stress and anxiety. When students experience too much anxiety, they may not be able to adjust to college life and this results in their wanting to leave school. A student with a more optimistic outlook is better able to overcome stress and cope more effectively within the academic environment (Chemmers et al., 2001). Prior research reveals that self-efficacy and optimism

are directly and indirectly related (through challenge threats) to academic performance and ability to adjust to college life (Chemmers et al., 2001) Optimistic students may be more likely to stay in school because they feel that people are helpful and will be there to help when things go wrong, whereas those who are not optimistic tend to think that everyone is against them and may create a lack of trust. Optimistic students may feel they can rely on others as opposed to doing everything by themselves in isolation. The feeling of isolation that a lack of optimism may create over time will result in the student thinking about dropping out.

Resilience is the ability to persist regardless of the circumstances and is seen as being a positive contributor to academic success (Martin & Marsh, 2009). Hartley (2011) shows that resilience can add incremental variance to predict GPA, showing that tenacity, tolerance of stress, and spirituality add to explaining variance in college GPA. He finds two primary types of resilience − intrapersonal and interpersonal. Those who are high in intrapersonal resilience are determined and have the drive to complete tasks in spite of difficulty. Resilient students have a positive attitude toward change and have an open mindset, believing that intelligence can be developed (Yaeger & Dweck, 2012). Resilient students are self-aware, and as a result better able to handle stress (Hartley, 2011). From an interpersonal viewpoint, resilient students realize social support is needed to thrive in the college environment. Yet they are pragmatic in their approach to making friends, knowing that it may take some time to develop friendships and are better able to handle rejections if those friendships don't materialize (Hartley, 2011). Resilient students may be more likely to stay in school because they can push through the feelings of being uncomfortable in both the classroom and in

social situations. They take responsibility for their outcomes and may see failure as a necessary building block to success.

Another factor that affects academic success and possibly retention is hope. Hope can be described as the student's ability to identify achievements, goals, and having the motivation and strategies to achieve those goals (Snyder et al., 2002). Students who are high on hope tend to be actively engaged in mapping out their learning processes, including assessing how difficult their assignments are, how much time it will take to complete them, and strategies to complete the assignments (Conti, 2000). They tend to think positively and are intrinsically motivated. As a consequence, they feel they are in control of their own success (Snyder et al., 2002). This orientation leads to thinking more of success and not failure, therefore creating a "can do" attitude, increasing the likelihood of success (Conti, 2000). Research shows that high hope students not only achieve higher GPAs, they are also more likely to graduate (Snyder et al., 2002).

Although there is prior evidence that the individual sub-facets of psychological capital – hope, self-efficacy, resilience, and optimism – may positively influence retention, the psychological capital construct is considered a higher order construct that measures the aggregate effects of the four individual variables and is a stronger predictor of academic success in total than any one of the variables individually (Luthans et al., 2007). For example, in two studies, one with college students majoring in business management and one with technology employees, the higher order psychological capital measure was more consistent and stronger in predicting performance and satisfaction than the individual components of psychological capital (Luthans et al., 2007). Therefore, it is my position that it would be beneficial to investigate the higher-order construct with regards to retention.

Psychological capital is potentially meaningful to retention because it gives perspective on how and why students are able to thrive and want to stay in school. Although GPA is an important factor in college success, it only tells us what happened, not how it happened. Psychological capital represents personal resources that can be developed. Interventions designed to increase awareness of psychological resources and how to use them may increase a student's desire to stay in school (Luthans et al., 2012). This is critical, particularly in university settings where interventions can be leveraged to aid students. Personality factors such as the H-factor are immutable (Barrick & Mount, 1991), but psychological capital provides coping resources needed to achieve positive outcomes (Luthans, Avey, Avolio, & Paterson, 2010; Luthans et al., 2012). Students high in psychological capital generally have a positive outlook on life, are confident in their abilities, and can see multiple options to solve problems. If a student chooses a strategy that doesn't work, those high in psychological capital can step back, re-evaluate, and persist until the task is complete (Luthans et al., 2012). They are more committed and are willing to put in the effort needed to be successful (Avey et al., 2011). Even though these students realize they will earn a grade in each class at the end of the semester, they are not paralyzed by this; rather they actively engage in their classes, focusing more on the learning process as opposed to just achieving a grade. This outlook creates a positive learning experience such that students want to stay in school. Students who are low in psychological capital may have a tougher time adjusting to the pressures of their new college environment. The demands of college, both social and academic, can create stress on students (Avey et al., 2011). Because those low in psychological capital tend to be less optimistic, they may experience anxiety, fatigue, or illness because they are not able to handle the stress (Avey et al., 2011). Because they are less hopeful, they are less likely to

identify options that can reverse the situation. Because they are less resilient, they don't feel they can recover from setbacks and so are less likely to try different approaches to integrate into the classroom and increase their social presence. Students may become so overwhelmed and frustrated such that they consider dropping out of school.

Hypothesis 4: Psychological capital is positively related to retention.

The Moderating Effect of Psychological Capital

Because psychological capital represents resources brought to bear in coping with a university environment, I hypothesize that psychological capital interacts with the H-Factor to either strengthen or weaken the relationship between the H-Factor and retention. Those who score high on the H-Factor tend to have a more accurate view of themselves (Baumeister & Exline, 2002; Tangney, 2000). This means humbler people don't distort situations to help them to feel better or worse (Peterson & Seligman, 2004). However, certain situations may derail students' thought processes. When faced with stressors of a new environment, distance from family, developing new social networks, and experiencing new classroom environments, rigorous academic standards, and learning how to be responsible, high H-Factor students may react positively or negatively. As an example, one class may have 300 students enrolled, five times larger than the student's high school graduating class. The subject may be tougher than the student expected, and as a result the student feels unprepared. When the professor calls on students randomly, it causes anxiety. In situations like this, a high H-Factor student may experience negative emotions; if they have few psychological resources, they may begin to doubt their abilities. After repeated similar situations, students may start to feel like they don't belong at the university.

Alternatively, high H-Factor students who have developed psychological resources experience this situation differently. They realize that that college will be comprised of both positive and negative experiences, and they have the resources to cope. The cumulative effect of being able to apply psychological resources is that they feel positive and value their college experience and are more likely to stay in school. Similarly, psychological capital can help those low on the H-Factor overcome their challenges and thus reduce the risk of dropping out of school. This interaction between H-Factor and the application of psychological resources is important to retention because although high H-Factor students may be likely to stay, a student who is able to apply the psychological resources of hope, optimism, resilience, and efficacy, strengthens that relationship. Conversely, low H-Factor students may be at risk for dropping out of school but be able to apply psychological resources to offset this risk such that they see the value of staying in school.

Hypothesis 5: Psychological capital moderates the relationship between the H-factor and retention such that the relationship between the H-Factor and retention gets stronger for higher levels of psychological capital.

The full hypothesized model is presented in Figure 1.

CHAPTER III

METHOD

Participants and Procedures

A survey link was sent via email to approximately 575 college of business students in their first semester at a land grant university in the Midwest region of the United States. Of the 575 students who were sent the survey link, 455 students completed the survey for a 79% completion rate. Participants volunteered to take the survey in Qualtrics during a freshman orientation class. Participants were instructed that they could take the survey on their phones, tablets, or laptops during class time. As an incentive, those who completed the survey received extra course credit. Based on an *a priori* power analysis, a correlation using effect size of .3 (medium), α of .05, and power of .95, required a sample of 134.

Measures

HEXACO

Although my hypotheses only included the H-factor and conscientiousness, I collected data on all the HEXACO variables. The HEXACO dimensions were measured using the AOE-P (Wallace, Edwards, & Dyer, 2015), which is a 96-item instrument with 16 items for each of the HEXACO personality factors and four items per sub-dimension. Example items include (a) *H-Factor*: "Other people tell me that I am a sincere person,"

"People see the real me every day;" (b) *emotionality*: "People tell me that I sometimes 'freeze-up' during difficult situations," "I seek comfort from others when things go wrong;" (c) *extraversion*: "I make friends easily at school," "In social situations, I find people are drawn to me;" (d) *agreeableness* "It is hard for me to stay angry at people," "It takes a lot to get me to lose my temper;" (e) *conscientiousness*: "I like for things to be in order," "Other people describe me as someone who thinks carefully before acting;" (f) *openness*: "I enjoy going to the theater for plays, musicals, and other forms of live theater," "I prefer working in an environment that is visually appealing." The measure uses a five-point Likert-type scale (1 = *strongly disagree*; 5 = *strongly agree*). Each of the six factors are scored by obtaining the mean of the item ratings.

Psychological Capital

Psychological Capital was measured using the 24-item Psychological Capital Questionnaire developed by Luthans, Youssef, and Avolio (2007) by compiling items for each subscale from previous research. There are four subscales; hope (seven items), optimism (five items), self-efficacy (six items), and resilience (six items). Students were asked to rate each of the items on a five-point Likert-type scale (1 = *strongly disagree*; 5 = *strongly agree*). A sample item for *hope* is "At the present time, I am energetically pursuing my goals" (Snyder et al., 1996). An example for *self-efficacy* is "I feel confident analyzing a long-term problem to find a solution" (Parker, 1998). An example for *resilience* is "When I have a setback, I usually recover from it" (Wagnild & Young, 1993). An example for *optimism* is "When things are uncertain for me, I usually expect the best" (Scheier & Carver, 1985). Psychological capital is scored by obtaining the mean of the 24 item ratings.

Outcomes

I obtained student retention data and GPA data from the university registrar's office. A student is considered to be retained when that student returns to the same university from one semester to the next. Retention was measured at two time periods – after the second semester of their freshman year and after the fourth semester (end of sophomore year). As such, these data were obtained in the summer following their freshman (second semester retention) and sophomore (fourth semester retention) years. GPA is defined as the cumulative GPA (which includes any college credits earned before enrolling at the university) calculated at the end of their freshman and sophomore years.

CHAPTER IV

RESULTS

Descriptive statistics and bivariate correlations are presented in Table 1. Hypotheses were tested using correlations and regressions. Hypothesis 1 predicted that the H-Factor would be positively related to retention at the end of the second and fourth semesters. Based on the bivariate relationships (see Table 1), Hypothesis 1 was not statistically significant for either the second or fourth semester (r = .05 and .04, respectively) and therefore was not supported. Hypothesis 3 predicted that the H-Factor would be more strongly related to retention than GPA. Based on the bivariate relationships (see Table 1), the results showed the opposite. The H-factor was related to GPA after both the second and fourth semesters (r = .10 and .11, respectively, $p \leq .05$) and was statistically significant. However, the relationship between the H-Factor and retention after the second and fourth semesters was not statistically significant (r = .05 and .04, respectively) and therefore Hypothesis 3 was not supported. Hypothesis 4 predicted that psychological capital as a higher order construct would be positively related to retention. Psychological capital was not related to retention after either the second or fourth semesters (r = .07 and .04, respectively) and therefore Hypothesis 4 was not supported.

I used hierarchical regression to assess all of the hypotheses, and results are displayed in Tables 2 and 3. I measured the dependent variable, retention, at two time periods: after the second and fourth semesters. Retention at the end of the second semester and the end of the fourth semester dropped from 88% to 80%, a 10% decline. In the first step of the hierarchical regression, I entered conscientiousness as a control (Hypothesis 2); at step two I entered conscientiousness, humility, and psychological capital (Hypotheses 1 and 4); and at step three, I entered the interaction effect between the H-Factor and psychological capital (Hypothesis 5). As shown in Tables 2 and 3, none of the five hypotheses was supported. The H-Factor did not predict retention above and beyond conscientiousness (Hypotheses 1 and 2), and neither the H-Factor (Hypothesis 1) nor psychological capital (Hypothesis 4) was related to retention.

Students enter college with stable personality traits such as the H-Factor and more malleable psychological capital, which determines a student's outlook on life. In Hypothesis 5, I predicted there would be a moderating relationship between the H-Factor and psychological capital such that the relationship between the H-Factor and retention gets stronger for higher levels of psychological capital. The interaction effect was not statistically significant, and thus Hypothesis 5 was not supported. The results were consistent using retention at the end of the second and fourth semesters.

CHAPTER V

DISCUSSION

Theoretical Implications

Many universities have tried with limited success to understand what factors lead to increased retention. Previous research shows that GPA is a significant predictor of retention, but GPA does not typically explain much variance in retention. Although students who make poor grades may leave, there are many more who leave for other reasons. Other efforts to understand retention have focused on family socioeconomic status, embeddedness within the university (e.g., membership in organizations), whether students live on campus, and other convenient data collected within the university system. Therefore, I took another approach to the problem of retention and argued that part of the solution is to understand students' underlying personality traits and malleable psychological capital states that may provide resources and coping skills resulting in a student staying in school. My specific objective was to understand whether a relationship exists between the H-Factor and retention and whether psychological capital moderated that relationship.

I studied personality variables that might add incremental variance to student retention. Research has shown that the personality trait conscientiousness is the best

personality predictor of GPA (Chamorro-Premuzic & Furnham, 2003; Conrad, 2006; Noftle & Robins, 2007). However, it falls short of realizing a more comprehensive view of the relationships between other personality variables and retention. Those high in the H-Factor have a sense of fairness and integrity. They are modest and "down to earth" and likely to welcome others into their social circles. In addition, students who are high in the H-Factor have the interpersonal skills that allow them to collaborate and participate in the classroom and get involved in social activities on-campus and earn the respect of professors. My research outcomes were not statistically significant, which suggests that the retention model may be more complex than I envisioned and different variables would need to be explored to fully explain student retention.

Prior research demonstrates that getting involved socially and academically are important for staying in school (Tinto, 1975, 1993). I hypothesized that students who were high in the H-Factor are self-aware and recognize when they are in trouble academically and therefore likely to seek help. I also posited that students who are high in the H-Factor will allow themselves time to make new friends through social interactions, dorm life, and campus organizations. However, I found no evidence for a direct relationship between the H-Factor and retention.

Where might psychological capital (hope, optimism, self-efficacy, and resilience) and personality traits fit in a new model? When students enter college, they have a certain view of life. Students who have a positive outlook on life tend to be more optimistic, resilient, and is confident in their ability to succeed. I hypothesized that those high in psychological capital are more likely to stay in school because they believe in their abilities, can persevere under stress, and have a "glass half full" approach to life. Unfortunately, this logic was not

supported in the present study because the relationship between psychological capital and retention was not statistically significant.

Although my hypotheses were not supported, I did observe some interesting relationships. For example, I obtained statistically significant relationships between GPA and retention at both the second and fourth semesters. Specifically, GPA at the end of the second semester was related to retention at the end of the second semester ($r = .33, p \leq .05$). GPA at the end of the second semester was also related to retention at the end of the fourth semester *(*$r = .40, p \leq .05$*)*. The correlation between GPA after the second semester and retention after the fourth semester suggests there may be a lag effect, and students may stay in school for another year after receiving a low GPA in the first year.

Limitations and Future Research

There are several potential limitations of my research on student retention. The first limitation is the use of a cross-sectional design whereby the independent variables of the H-Factor and psychological capital were measured at the same time. Psychological capital (hope, optimism, self-efficacy, and resilience) is considered to be more malleable and can change over time. A longitudinal study that measures the H-Factor and psychological capital over multiple time periods would allow a test of the malleability of psychological capital and personality, particularly as it relates to development among young adult college students. It is likely that psychological capital and, to a lesser extent, the H-factor could transform more during a student's freshman year than at any time during his/her life because of the significant life change associated with the transition to college and rapid psychological development associated with 18-19 year olds.

Another limitation of my research was that the model was simple and general. Our understanding of retention may go beyond simple linear models. As mentioned above, personality among 18-19 year old students may change at a greater pace than that of older adults. Thus, it may be advantageous to investigate personality longitudinally. Psychological capital is considered to be malleable, so measuring this periodically as a student advances toward graduation would allow for the opportunity to measure how psychological capital changes over time. For example, it is plausible that resiliency strengthens after repeated failures during the transition to college or that self-efficacy changes in response to college performance. The sub-facets of psychological capital represent resources that may be brought to bear to cope with challenges and stressors and may change in response to success or failure. An understanding of how psychological capital ebbs and flows over time, as opposed to one snapshot at the during the first semester freshman year, would help us understand how this potential resource responds to success or failure and/or how students may deploy these resources as a coping mechanism.

Although I assumed that psychological capital represented a resource that may influence student retention, another potential explanation could be explained by Appraisal Theory. Appraisal Theory (Lazarus, 1993) suggests that a person's ability to cope with stress is based on his/her beliefs, goals, and emotions (internal) and how one perceives his/her environment (external). Students may use either *problem focused coping* or *emotion focused coping* (Lazarus, 1993, p. 8), depending on their beliefs regarding whether they can affect the outcome. Students who believe that studying for a test will lead to a better grade engage in problem-focused coping. On the other hand, a student who believes that no matter how hard they study for an exam, they will get a bad grade engages in emotion-focused coping. The

appraisal process changes based on the individual and the environment. How students appraise and cope impacts their ability to manage stress and may determine whether a student decides to stay in school. This understanding may help college administrators to implement interventions that increase awareness of negative stressors and change the narrative, resulting in more favorable coping behaviors.

In measuring both HEXACO and psychological capital, there are opportunities to test other models. Predicting student retention may have intricacies that are difficult to discover through linear regression. Therefore, another future study might be to use machine learning and a predictive model approach to retention. This would allow researchers to look at many variables and their sub-facets that would help us uncover intricate patterns, understand decision trees and hierarchies to help explain student retention. For example, the HEXACO scale has 96 items and the psychological capital scale has 24 items. With machine learning, researchers could test each of the individual items or subscales and how they interact to predict retention in a nonlinear, exploratory fashion.

Conclusions

Student retention has been a serious issue for colleges and universities for decades and continues to be a puzzle that has not been completely solved. Despite ongoing efforts to improve retention, perhaps more creativity is needed to suggest new methods and models that would result in a deeper understanding of why students decide to stay in school. Although my hypotheses were not supported, there are a number of psychological variables and processes that might explain more variance in student retention.

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APPENDIX A

Table 1. Descriptive Statistics and Intercorrelations Among Study Variables

Variable	*M*	*SD*	1	2	3	4	5	6
1. H-Factor	3.32	.44	*.71*					
2. Conscientiousness	3.85	.52	.26**	*.88*				
3. Psychological Capital	3.97	.53	.11*	.43**	*.83*			
4. Ret. 2nd Semester	.88	.32	.05	.12*	.07	—		
5. Ret. 4th Semester	.80	.40	.04	.07	.04	67**	—	
6. GPA 2nd Semester	3.23	.63	.10*	.22**	.14**	34**	.40*	—
7. GPA 4th Semester	3.18	.63	.11*	.22**	.13**	.30**	.39**	.95**

Internal consistency estimates are in the diagonal. Ret. = retained. The means for retention 2nd semester and 4th semester are percentages of students who were retained. $N = 455$. *$p \leq .05$, **$p \leq .01$

Table 2. Hierarchical Regression with Retained to the 2nd Semester as the Dependent Variable

	Step 1				Step 2				Step 3			
Variable	b	SE	β	t	b	SE	β	t	b	SE	β	t
Step 1:												
Conscientiousness	.07	.03	.12	2.5								
Step 2:												
Conscientiousness					.06	.03	.10	1.81				
Humility					.01	.04	.02	.38				
Psychological Capital					.02	.03	.03	.59				
Step 3:												
Conscientiousness									.06	.03	.10	1.83
Humility									.02	.04	.02	.44
Psychological Capital									-.01	.05	-.02	-.23
H-Factor * Psychological Capital									-.06	.07	-.04	-.77
R^2	.013				.014				.016			
ΔR^2					.001				.001			

Hierarchical Regression Estimates for Incremental Validity of the H-Factor on retention and to test the moderated relationship of the H-Factor and psychological capital on retention. $N = 455$

Table 3. Hierarchical Regression with Retained to the 4th Semester as the Dependent Variable

	Step 1				Step 2				Step 3			
Variable	b	SE	β	t	b	SE	β	t	b	SE	β	t
Step 1:												
Conscientiousness	.06	.04	.07	1.58								
Step 2:												
Conscientiousness					.05	.04	.06	1.17				
Humility					.02	.04	.02	.50				
Psychological Capital					.01	.04	.01	.23				
Step 3:												
Conscientiousness									.05	.04	.06	1.18
Humility									.02	.04	.03	.53
Psychological Capital									-.01	.06	-.01	-.12
H-Factor * Psychological Capital									-.03	.09	-.02	-.35
R^2	.006				.006				.006			
ΔR^2					.000				.000			

Hierarchical Regression Estimates for Incremental Validity of the H-Factor on retention and to test the moderated relationship of the H-Factor and psychological capital on retention. $N = 455$

APPENDIX B

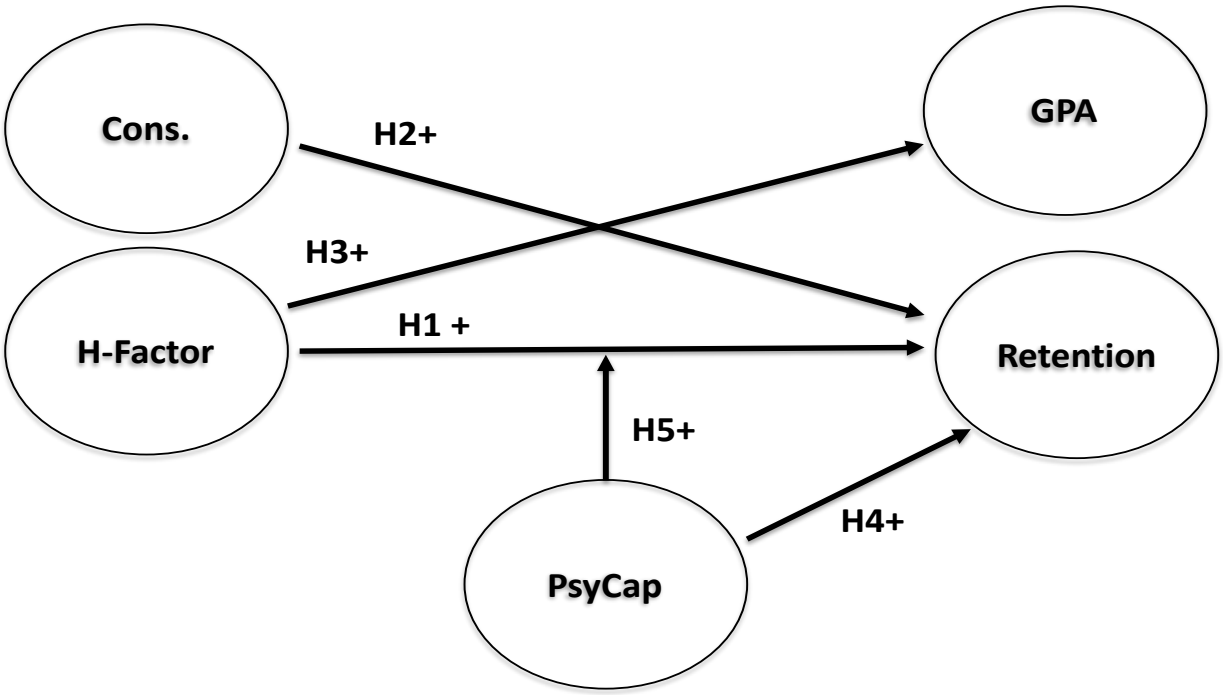

Figure 1. Hypothesis Model
Cons. = Conscientiousness, PsyCap = psychological capital

VITA

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Doctor of Philosophy

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