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# Nontraditional Students in Management and Accounting Programs: Investigating the Relationship between Personality and Major Satisfaction in the Community College Setting

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NONTRADITIONAL STUDENT PERSONALITY AND MAJOR SATISFACTION

Nontraditional Students in Management and Accounting Programs: Investigating the  
Relationship between Personality and Major Satisfaction in the Community College

Setting

Brad Ward

Dissertation

George Fox University



GEORGE FOX  
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COLLEGE OF BUSINESS

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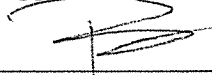
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### **Abstract**

High school students and working-age adults are frequently pressured by teachers, relatives, peers, employers, and state and federal governments to attend college for such reasons as obtaining new skills, increasing salary and prestige, and seeking new career opportunities (Baxter & Kavanagh, 2012; Calmes, 2014; Holcomb, 2008; Pringle, DuBose, & Yankey, 2010). Approximately 25% of these students drop out of school within the freshman year (ACT, 2013) due, in part, to a poor personality fit with their major (Jones & Jones, 2014). Consequently, attrition has become a costly problem for university administrators and taxpayers (American Institutes for Research, 2011). Personality is a predictor of academic success (Rosander & Backstrom, 2014; Tyagi & Bansal, 2010), and attrition may be reduced via proper personality screening.

Personality psychologists agree that personality can be described by five, broad traits: extraversion, conscientiousness, agreeableness, neuroticism, and openness to experience (Hunt, 2007). Personality has also been linked to major satisfaction (Logue, Lounsbury, Gupta, & Leong, 2007), which, in turn, is linked to positive retention rates (Zhai, 2012). Few studies regarding personality and its relation to major satisfaction have been carried out on business programs, specifically the management and accounting disciplines (Lounsbury, Smith, Levy, Leong, & Gibson, 2009). Therefore, the purpose of this study was to investigate which of the Big Five traits relate to major satisfaction in the hopes of discovering a connection that will help university administrators to better improve retention rates. Furthermore, nontraditional student characteristics, such as gender, age, and work history, were examined to determine whether and to what degree each of these factors may influence trait development (Debast et al., 2014; Kovar, Ott, &

Fisher, 2003; Scollon & Diener, 2006). Key findings from this study are described below. Management students were more extraverted and open to experience than accounting students. Women scored higher in conscientiousness than men. Male management students scored lower in neuroticism than women. Female accounting students were more satisfied with their college major than female management students. Conscientiousness was a predictor of college major satisfaction. Finally, students who were age 30 or older, as well as students who have worked for 5 or more years, possessed higher levels of conscientiousness and lower levels of neuroticism, than younger students.

Keywords: Big Five Personality, age, gender, work history, major satisfaction

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## **Chapter 1**

### **Introduction**

In the U.S., mounting societal pressure is pushing citizens to acquire a college degree. High school students are relentlessly pressured by parents and recruiters to go to college and nontraditional students are encouraged to acquire the necessary skills (via college) to obtain decent paying jobs (Baxter & Kavanagh, 2012; Calmes, 2014; Holcomb, 2008). Many students today have children, are single parents, have not been to school in years, have limited financial sources, work part-time or full-time, or need remedial courses to be able to attend entry level courses (Chen, 2014). Various governmental and philanthropic resources have been designated to help students from various backgrounds to go back to school. Some of these financial resources are specifically aimed to help international, female, disabled, minority, aging, and scholarly students (Kantrowitz, 2014). Thus, regardless of a student's demographic segment, resources are available to them, and a societal expectation that the student will attend college is present.

As the student demographic continues to evolve and increasing numbers of nontraditional students are entering the classroom, university administrators and advisors must work together to ensure that students are successful. Many elements may influence major selection, including projected salary, career opportunities, prestige, reputation of major, gender, parental or peer pressure, and prior work experiences (Pringle, DuBose, & Yankey, 2010); however, many students are not happy with their chosen majors. College students who are happy with their chosen major have higher GPAs and greater life satisfaction than students who are not content with their major selection; approximately

50-75% of college students are dissatisfied with their majors (Logue, Lounsbury, Gupta, & Leong, 2007; McIlveen, Beccaria, & Burton, 2013).

One compelling reason why students are dissatisfied with their selected academic program is poor personality/major fit (ACT, 2013; Jones & Jones, 2014). Personality is a significant predictor of career and academic success (Rosander & Backstrom, 2014; Tyagi & Bansal, 2010) amongst other predictors, such as intelligence (IQ), gender, emotional intelligence, and standardized test scores (Sparkman, Maulding, & Roberts, 2012). Personality, as defined by Lakhal, Frenette, Sevigny, and Khechine (2012), is the grouping of individual characteristics (into traits), which are stable over time, that account for an individual's patterns of feeling, thinking and behaving. Therefore, students typically choose a major based on external factors, such as peer pressure, potential income, or prestige. However, selecting a major because it will be enjoyable is often secondary to external factors.

Most personality psychologists accept that five broad traits (conscientiousness, agreeableness, neuroticism, openness to experience, and extraversion) best describe personality (Hunt, 2007; Jang, Livesley, & Vernon, 1996), and the Big Five traits (also known as the Five Factor Model; hereafter FFM) have been related to major and life satisfaction (Logue et al., 2007; Lounsbury et al., 2009). Unfortunately, incoming students are typically unsure of which major to pursue and often do not pick a major that relates to their personality (Lakhal et al., 2012). Academic advisors and university administrators must consider personality/major fit to reduce student turnover and improve success in the classroom, which will lead to higher graduation rates. Furthermore, program disciplines and sub-disciplines must also be considered since a general program

like business administration may relate to different traits than the disciplines of economics, accounting, and management, and the sub-disciplines of management (human resources, hospitality management) may also differ in regard to personality traits.

### **Student Attrition**

Approximately 67% of new jobs require college education and training, and both the federal and state governments are significantly investing into the higher education system via grants and student loans (Carnevale & Desrochers, 2003). In return for financial assistance, universities are expected to minimize attrition (O'Keeffe, 2013; Perkins Collaborative Research Network, 2014). Student dropout rates are staggering, and the cost to taxpayers, federal and state governments, universities, and industry is astronomical. According to the American Institutes for Research (2011), federal and state governments invested \$9 billion between 2003 and 2008 into students who dropped out of four-year universities within their first year. Community colleges, which have higher dropout rates, were not included in this research, so it is clear that student attrition rates, defined as the proportion of students who drop out of college each year, need to be drastically improved (O'Keeffe, 2013).

According to the ACT 2013 trend reports, four-year public universities and two-year public community colleges lost 35% and 45% of their students to first-year attrition, respectively. Furthermore, only 36% of four-year students completed their degrees within a five-year timeframe and a meager 22.5% of public community college students completed their associate's degrees within three years (ACT, 2013). Private four-year universities, which generally have lower first year attrition rates and higher degree completion percentages, still have reason for concern. Nearly 33% of freshmen do not

return for their sophomore year and only 58.5% complete their bachelor degree programs within five years (ACT, 2013).

From a university administrator's perspective, student turnover is costly; classrooms are not filled to capacity (tuition income reduced), recruiting costs increase, and attrition improvement strategies divert resources since they take time to develop, implement, and monitor (Seidman, 2006). The federal and state governments also have reason to be concerned with degree completion because graduates are likely to make a positive economic impact on society, effectively participate in federal, state, or local government, commit fewer crimes, and actively engage in community service (Tinto, 2004). The workforce and general economy are negatively impacted by attrition due to students lacking higher level skills, such as critical thinking, as well as technical and soft skills (Rasool & Botha, 2011; Robles, 2012).

### **Major Satisfaction**

Reasons that students drop out of college include a lack of academic preparation, socio-economic status, life demands, and emotional health (Cameron, Roxburgh, Taylor, & Lauder, 2011; Lockwood, Hunt, Matlack, and Kelley, 2013; Navarro, 2012). One of the primary reasons that students drop out of school is major dissatisfaction, which is often overlooked by researchers and retention strategists (Ramist, 1981). Major satisfaction is defined as a student's happiness with his/her selected major and the belief that his/her skills and self-concept are enhanced by the degree program. Furthermore, such a student is happy with his/her choice of major and does not wish to change it (Nuata, 2007). Students who are dissatisfied with their majors either switch majors, hindering their academic progress, or drop out of school and enter the workforce with no



formalized higher education (Guptill, Levy, & Lounsbury, 2011; Logue et al., 2007). In addition, satisfaction with one's declared college major positively impacts attrition rates, motivation, and academic performance, and personality traits influence satisfaction with college major (Logue et al., 2007; Zhai, 2012). However, according to an ACT (2010) survey, personality assessments were the least utilized retention practice (out of 94 possibilities). Hence, to reduce student attrition, reliable and valid personality inventories, preferably used proactively in the advising process, are needed to improve student satisfaction.

### **The Five Factor Model and the Changing Student Population**

The Five Factor Model (FFM) is one of the most empirically studied personality models (Encalade & Fok, 2012), with the Big Five NEO-PI-R inventory being utilized in over 1,000 published studies (Johnsson, 2009). In addition, the various FFM inventories have been translated into over 40 languages and studied in more than two dozen cultures (McCrae & Costa, 2003). However, one area lacking investigation is the relation between major satisfaction and business student personality (Lounsbury et al., 2009), and most personality studies involving the student population focus on traditional students.

According to the National Center for Education Statistics, 75% of college students are nontraditional, meaning that 75% of students have at least one of the following characteristics: was not enrolled in college the same calendar year after high school, does not have a high school degree, attends college part-time, works full-time, is considered financially dependent, has dependents other than a spouse, or is a single parent (2002). Therefore, nontraditional students are typically older and have more life and work experience than traditional students (Weaver & Qi, 2005). A growing body of literature

has suggested that personalities can change over an entire life span and that work experience can influence personality changes (Woods, Lievens, De Fruyt, & Wille, 2013). However, studies that measure business student personality, like those completed by Lounsbury et al. (2009) and Logue et al. (2007), consisted of samples where less than 4% of the students were over the age of 25. McCrae and Costa (2003) believe that traits remain relatively stable through the age of 30, while Srivastava et al., (2003) claim that Big Five traits may change even more after the age of 30. Again, the over-30 age group is seldom captured with FFM inventories in relation to college students.

In addition to the influence of life and work on personality, gender plays a vital role with regard to major selection and success. Lakhali et al. (2012) discovered that females generally selected business majors that involved personal contact, such as marketing or human resources, and were less likely to select a data driven major, such as accounting or finance. Shahzad et al. (2013) noted that women in business and non-business programs differ in Big Five traits compared to their male counterparts. Since personality relates to major satisfaction, and women tend to differ from men, gender is an important variable to consider when studying business student personality. Furthermore, the federal government includes the gender less likely to enter a certain academic program among nontraditional students. For example, women are considered nontraditional (less likely to attend) in business management programs and men are nontraditional in accounting programs (Michigan Community College Network, 2013). Despite these considerations by the government, Lakhali et al. (2012) noted that females typically select person-oriented majors, like management, and did not prefer data-driven majors, like accounting.

**Significance of Study**

The purpose of this study was to investigate the FFM as it relates to accounting and management student major satisfaction. Personality theories have converged on five broad traits to describe personality: conscientiousness, agreeableness, neuroticism, openness to experience, and extraversion (Lounsbury et al., 2009), and many FFM questionnaires are highly reliable and valid in the academic setting (Kamarulzaman & Sahari Nordin, 2012; Naydenova, Lounsbury, Levy, & Young Kim, 2012). However, most FFM studies, as well as studies completed with various personality inventories, do not address student personality and satisfaction within business disciplines. In addition, most studies do not consider gender as an independent variable; the focus has typically been on traditional students who have minimal life and work experience. Since students who are satisfied with their majors are more likely to continue in their degree programs, and personality/major fit is a component of major satisfaction, a study of the relationship between personality traits and major satisfaction is timely.

**Statement of the Research Problem**

Dissatisfaction with one's major is a determinant to changing majors (affects 50-75% of college students) and a precursor to dropping out of college (attrition), so advisors, administrators, legislators, and career counselors are seeking ways to improve major satisfaction. The Big Five traits have been connected to collegiate life satisfaction and career satisfaction; however, little research has been done with regard to business major satisfaction, especially within disciplines. Few studies have also been done on nontraditional student characteristics, such as the impact of age, gender, or work history in regard to major satisfaction. Therefore, investigating whether the FFM relates to

major satisfaction is important to reduce student turnover and improve course success and graduation rates (Lounsbury et al., 2009; Logue et al., 2007).

### **Research Questions**

Several research questions were investigated by this study. The primary research focused on major satisfaction as it relates to the FFM. Since students commonly select majors for a number of reasons besides personality/major fit, and, as personality is a predictor of major satisfaction, personality testing is the foundation of this study. Additional questions dealing with nontraditional student characteristics were investigated.

1. Which of the Big Five traits are related to management students' major satisfaction?
2. Which of the Big Five traits are related to accounting students' major satisfaction?
3. Do accounting students' personalities differ from those of management students?
4. Do the personality traits of male and female students differ within each major?
5. Do the personality traits of students who have 5 years or more of work history differ from those with less than 5 years of work history?
6. Do the Big Five traits differ between students who are older than age 30 and those younger than age 30?

### **Hypotheses**

Hypothesis 1a: Accounting students will rank high in conscientiousness and introversion and low in agreeableness and openness.

Hypothesis 1b: Accounting students' scores in both conscientiousness and introversion will each have a positive relationship with the Academic Major Satisfaction Scale (AMSS). The relationship between agreeableness and the AMSS and the relationship between openness and the AMSS will both be negative.

Hypothesis 2a: Management students will rank high in extraversion and low in conscientiousness.

Hypothesis 2b: The relationship between management students' scores in extraversion and the AMSS will be positive, and the relationship between conscientiousness and the AMSS will be negative.

Hypothesis 3 – Accounting students will score higher in introversion and conscientiousness and lower in agreeableness, neuroticism, and openness than management students.

Hypothesis 4a – Both female accounting and management students will score higher than men in neuroticism, agreeableness, conscientiousness, openness, and extraversion.

Hypothesis 4b – Female management majors will have higher major satisfaction than female accounting majors.

Hypothesis 4c – Women majoring in management will have higher major satisfaction than men majoring in management.

Hypothesis 4d – Women majoring in accounting will have less major satisfaction than men majoring in accounting.

Hypothesis 5 – Students who are over the age of 30 will have lower mean scores in neuroticism, extraversion, and openness and higher mean scores in agreeableness and conscientiousness than students who are under the age of 30.

Hypothesis 6 – Students who have five or more years of work experience will score higher in extraversion and conscientiousness and lower in neuroticism, than students with less than five years of work experience.

### **Definition of Terms**

Big Five Personality Traits:

Conscientiousness – The individual, in general, is reliable, organized, and careful.

Agreeableness – The individual, in general, is kind, cooperative, and trusting.

Neuroticism – The individual, in general, is unstable, tense, and insecure.

Openness - The individual, in general, is curious, reflective, and creative.

Extraversion - The individual, in general, is outgoing, bold, and talkative

(Barondes, 2012).

Major satisfaction: A student's happiness with his/her selected major and the belief that his/her skills and self-concept are enhanced by the degree program. The student is happy with his/her choice of major and does not wish to change it (Nuata, 2007).

Myers-Briggs Personality Types:

Extraversion – The person's interest flows mainly to the outer world of actions, objects, and persons.

Introversion – The person's interests flows mainly to the inner world of concepts and ideas.

Sensing – The person prefers to perceive the immediate, real, practical facts of experience and life.

Intuition – The person prefers to perceive the possibilities, relationships, and meanings of experiences.

Thinking – The person prefers to make judgments and decisions objectively.

Feeling – The person prefers to make judgments subjectively.

Judgment – The person prefers to live in a decisive and planned way.

Perception – The person prefers to mostly live in a flexible way (Fallan, 2006; The Myers Briggs Foundation, 2012).

Nontraditional Student: A student whose gender is not typical in an academic program, a student who is over the age of 30, or a student who has over five or more years of work experience.

Personality: The grouping of individual characteristics (into traits), which are stable over time, that account for patterns of feeling, thinking and behaving (Lakhal, Frenette, Sevigny, & Khechine, 2012).

Student Attrition: The proportion of students who drop out of college each year (O'Keeffe, 2013).

Trait Stability: After the age of 30, McCrae and Costa (2003) claim that there is minimal personality change.

**Delimitations**

The anticipated time period of this study was April through May 2015. At this point, students were more likely to have been enrolled a minimum of one semester, and collecting data late in the semester had the benefit of students being better able to determine if they were satisfied with their majors. The study took place at a large community college in southwest Michigan. Community colleges typically enroll older students than traditional universities, making this study unique amongst literature focusing on student personality. The Big Five Inventory, based on the FFM, was used to assess personality traits based on participant responses since personality psychologists have determined this inventory to be reliable and valid (John & Srivastava, 1999), and the FFM comprehensively identifies personality (Hunt, 2007). The Academic Major Satisfaction Scale (Nauta, 2007) was utilized to relate trait responses captured by the Big Five Inventory to major satisfaction in the hopes of better guiding academic advisors and university administrators in their efforts to reduce student attrition.



## Chapter 2

### Literature Review

Does business student personality relate to major satisfaction and which personality inventory should be used to capture traits? Do nontraditional students differ from traditional students in relation to personality traits? If so, test administrators must be aware of these factors since they may skew study results. Additionally, if traits do not remain consistent over the life span, advisors should realize that self-reported traits captured by an inventory are not static, and those advisors must be willing to test students at different time intervals. This literature review begins with a brief history of personality test history to review which personality inventories are reliable and valid. Major satisfaction studies will also be discussed, as well as personality studies pertaining to age, gender, and work history.

### Conceptual Foundations of Modern Personality Testing

Personality theorists have long studied personality, debates continue regarding the degree to which traits are hereditary. Hippocrates (460-370 B.C.) believed that human moods, or temperaments, were inherited and could be determined by examining bodily fluids (Humor, 2013). Carl Jung, a Swedish psychologist who penned the groundbreaking *Psychological Types* on which the Myers Briggs Type Indicator (MBTI) is based, believed that, under normal conditions, children's personalities were the result of genetics and not familial environment (1921). Jung also believed in personality development through a process he identified as individuation: human beings could only express one type within a stage of life, such as aggressiveness in young adulthood, and the opposite, relaxedness, would prevail later in life to balance out the individual

(McCrae & Costa, 2003). Similar to Hippocrates and Jung, Gordon Allport, the originator of the Big Five trait hierarchy, assumed that traits had internal origins (John & Srivastava, 1999).

Many of the personality tests that are utilized in industry and education derive from the work of Hugo Munsterberg, and more notably, Jung. In 1913, Munsterberg, a Harvard professor, wrote *Psychology and Industrial Efficiency* and described his simulated experiments in which trolley drivers' reflexes were tested when pedestrians and animals would step in front of their vehicles. The purpose was to eliminate poor drivers and keep the fittest drivers. This Darwinian mindset was applied to business; hiring the fittest workers would ensure a company's survival (Munsterberg, 1913).

Frederick Taylor, who scientifically improved processes in factories via the time study method, tried to find the "one best way" to run each process. In other words, he was attempting to make the designated processes more effective and efficient. Munsterberg, then, attempted to find the "one best person" to fit with the "one best way." Munsterberg refers to Taylor's work in *Psychology and Industrial Efficiency* and the idea that the fittest companies would survive by combining his own ideas and those of Taylor (Munsterberg, 1913). At the turn of the 20<sup>th</sup> century, colleges also began screening to find the fittest students via objective or self-report aptitude tests (WGBH Educational Foundation, 2014). Objective assessments are created in formats such as true/false, word selection, or ranking via a scale (Black, 1994). As psychological testing continued to be utilized by industry and the Army during both world wars, universities followed suit by creating career counselor and academic advising positions that utilized placement testing (Gillespie, 2003).

Shortly after the concept of employee/career fit was established by Munsterberg, Jung published *Psychological Types* in 1921. Although the field of psychology was not widely accepted at this point in time (Kapardis, 2012), Jung was very influential and several of the contemporary personality tests, such as the MBTI and the Keirsey Temperament Sorter (KTS), were based on *Psychological Types* (The Keirsey Temperament Sorter, 2014; The Myers Briggs Foundation, 2012). According to *Psychological Types*, a person's attitude is either extraverted or introverted. Extraverts draw their energy from outside sources, whereas introverts are energized by reflection and internal awareness. A person functions by use of perception (including sensing and intuition) or judging (including thinking and feeling). Thus, not only is an individual either extroverted or introverted, a person also gathers information using reliable data (sensing) or gut feel (intuition) and makes decisions based on deep thought (thinking) or emotion (feeling) (Jung, 1921).

### **Personality Tests in the 21<sup>st</sup> Century**

Three of the most prevalent objective personality inventories that businesses and universities utilize are the MBTI, the KTS, and the True Colors Personality Traits Spectrum. The MBTI is the most closely linked to Jung (followed by the KTS) since his immediate followers, Isabelle Briggs Myers and Kathryn Briggs, developed the assessment according to the types listed in Jung's work (The Myers Briggs Foundation, 2012).

When participants complete the MBTI, they are judged on how they prefer to focus on the world (introverted or extroverted), how they interpret information (sensing or intuiting), how they make decisions (thinking or feeling), and how they deal with the

outside world (judging or perceiving). Although the participant's type is initially scored as a percentage, 5% extraversion for example, the results are dichotomized. Sixteen variations are possible since only one trait from each grouping is allowed. For example, a person could possess an ENTP type (extraverted, intuitive, thinking, and perceiving) (The Myers Briggs Foundation, 2012). Table 1 offers further description regarding the dichotomized types (Fallan, 2006; The Myers Briggs Foundation, 2012).

Table 1

*MBTI Personality Types*

Extraversion – The person's interest flows mainly to the outer world of actions, objects, and persons.	Introversion – The person's interests flow mainly to the inner world of concepts and ideas.
Sensing – The person prefers to perceive the immediate, real, practical facts of experience and life.	Intuition – The person prefers to perceive the possibilities, relationships, and meanings of experiences.
Thinking – The person prefers to make judgments and decisions objectively.	Feeling – The person prefers to make judgments subjectively.
Judgment - The person prefers to live in a decisive and planned way.	Perception – The person prefers to mostly live in a flexible way.

Since the MBTI is the predecessor of both the KTS and True Colors Personality Traits Spectrum, its reliability and validity scores are important. If the reliability and validity were poor, the KTS and True Colors assessments would also be suspect. Researchers have come to different conclusions regarding the trustworthiness of the MBTI. McCrae and Costa (1989) suggest that researchers who have found the MBTI to be useful should abandon it for the FFM. McCrae and Costa also discovered that the MBTI dimensions were not truly dichotomized and the JP and SN scales related to each

other. The dichotomous nature of the MBTI was also criticized by Stricker and Ross, who deemed that it had no bimodal distribution of types, meaning extraverts and introverts (for example) were not truly different and may score similarly on the assessment (1964). Pittinger (2003) noted several studies that demonstrated that 50% of subjects would be reclassified into a new type within a five-week period (test-retest interval).

In response to skeptics, Daisley (2011) claimed that test-retest reliability of the MBTI when applied to college students was over 80% and the internal consistency in a national census study was over 90%. Daisley also argued that the MBTI was valid by citing strong correlations between MBTI dimensions and items from both the California Psychological Inventory and the NEO-PI (FFM) inventory; correlations ranged from .49 to .74. Likewise, Johnsson mentions the relation between the MBTI and the NEO-PI-R (2009). Therefore, evidence for the reliability and validity of the MBTI is conflicting.

The KTS is similar to the MBTI in that it dichotomously measures the same variables, but the primary difference is that the results are listed under a temperament (type) category: artisan, guardian, rational, or idealist (The Keirsey Temperament Sorter, 2014). Below is a table based on the work of Russo, Mertins and Ray (2013). Similar to the MBTI, the SN and JP types present concerns. In a cross-cultural study, the Cronbach's alphas were reliable (mean = .75) for the dichotomous pairs. However, five JP and three SN pairs were removed from Canadian and Korean participants, respectively, to produce reliable scales (Abramson, 2010).

Table 2

*Keirsey Temperaments*

Temperament	Type	Intelligent Roles
Idealist	ENFJ, INFJ ENFP, INFP	Mentor Advocate
Rational	ENTJ, INTJ ENTP, INTP	Coordinator Engineer
Guardian	ESTJ, ISTJ ESFJ, ISFJ	Administrator Conservator
Artisan	ESTP, ISTP ESFP, ISFP	Operator Entertainer

The FFM inventories, particularly the NEO-PI-R, are also objective psychological tests. In the 1930s, Gordon Allport, a Harvard psychology professor, listed all words (17,953 words) from the *Webster's New International Dictionary* that described personality traits. The list was quickly synthesized to around 1,000 words by deleting "like" words (Barondes, 2012). As statistical techniques advanced in the mid-20<sup>th</sup> century, the work of Allport was validated in the 1940s by Cattell, who developed the 16 Personality Factor questionnaire through the use of correlation analysis and multiple surveys (John & Srivastava, 1999). Eventually, the terms used to describe traits were reduced to five large domains by Goldberg in the 1980s via factor analysis (Barondes, 2012): extraversion, conscientious, neuroticism, agreeableness, and openness. Table 3 has been adapted from Barondes (2012).

Table 3

*Big Five Personality Descriptions*

	Conscientious	Agreeable	Neurotic	Open	Extravert
High	Reliable, organized, careful	Kind, cooperative, trusting	Unstable, tense, insecure	Curious, reflective, creative	Outgoing, bold, talkative
Low	Unreliable, disorganized, negligent	Unkind, uncooperative, suspicious	Stable, relaxed, secure	Uninquisitive, unreflective, uncreative	Withdrawn, timid, reserved

The NEO-PI-R, which consists of 240 questions, was developed by McCrae and Costa in the early 1990s to capture Big Five traits (Piedmont, 2001). A participant could rank high, low, or moderate in each trait. The extraversion score, for example, represents not only extraversion but also introversion (low extraversion). Thus, the participant would score on the continuum as extreme, moderate, or low extraversion, or low, moderate, or extreme introversion. An example result of a Big Five assessment could be low extroversion, high conscientiousness, low neuroticism, moderate agreeableness, and high openness. The FFM (NEO-PI-R) is considered to be more comprehensive than the MBTI and KTS because it includes the neuroticism/emotional stability dimension (Barondes, 2012; Briggs, Copeland, & Haynes, 2007). Furthermore, the FFM inventories have a more robust design than the MBTI since the model has been tested and modified through factor analysis over decades, whereas the MBTI is primarily based on the theoretical assumptions of Jung (Johnson, 2009). Finally, the NEO-PI-R inventory is highly reliable and valid. The Cronbach's alphas for the test range from .86-.92 and the construct validity, measured by self-ratings correlated to peer-ratings, was  $r=56.5$  (Piedmont, 2001).

Although the True Colors Personality Traits Spectrum differs structurally from the previous personality assessments, it still derives from the KTS (Cooper, 2009). Little research has been done with regard to the reliability and validity of the True Colors assessment, but Cooper claims that the test-retest reliability over a 5-week period is .94 and, in general, is strongly correlated with the MBTI (2009). Instead of the traditional objective report inventory, the True Colors assessment consists of three steps. In the first step, the participant views cards that portray certain personal characters (for example, a joker) that are representative of the various colors in the personality trait spectrum, and the participant aligns the cards from "most like me" to "least like me." Second, the participant flips the cards over and reads the description of the character that he/she has selected. At this point he/she is able to rearrange the cards if necessary. Third, the participant ranks groups of words, known as word clusters, from "most like me" to "least like me." After the test is scored, a color is assigned to the individual, similar to an MBTI score (Crews, Bodenhamer, & Weaver, 2010). The four colors of the trait spectrum are blue (mediator, optimistic, passionate), gold (detail oriented, punctual, loyal), green (intellectual, theoretical, conceptual), and orange (playful, risk taker, entertainer). The relationship between the color scale and MBTI types are as follows: Blue is approximate to NF, gold is approximate to SJ, green is approximate to NT, and orange is approximate to SP. The True Colors assessment has also been utilized by major companies such as McDonald's, Blue Cross/BlueShield, Marriott, and Boeing (Crews, Bodenhamer, & Weaver, 2010).



**Predictors of Academic Success and Attrition**

Prior to investigating business student personality as it relates to major satisfaction, it is important to review studies of personality and nontraditional student variables like gender as predictors of academic success. If personality impacts academic performance, students that fit well with their chosen major may perform better in class, hopefully leading to increased graduation rates (Logue et al., 2007; Zhai, 2012). In a study of undergraduate students, Karimi (2012) discovered that female students and students with higher levels of agreeableness achieved higher GPAs. Furthermore, part-time students, who were considered to be older than full-time students, under-performed in their academics. In a study of community college students enrolled in an environmental biology course, students who were academically prepared (academic placement test) and worked less than 12 hours per week performed better in the course (Wolff, Wood-Kustanowitz, & Ashkenzi, 2014). Gender was deemed to not be a predictor of academic performance.

In regard to personality, conscientious and neurotic Swedish high school students (first tested at age 16, then again at age 19), had better grades than other personality types (Rosander & Backstrom, 2014); IQ was also a predictor of academic performance. In this case, neuroticism counterintuitively related to better academic performance: the researchers believed that emotionality, especially fear, may have actually been a positive trait in that students who were afraid of failing tests increased their study and preparation. The conscientiousness trait also appeared in a study of undergraduate psychology students; conscientiousness was related to higher exam scores (Diseth, 2013). In a cohort of nursing students, Deary, Watson, and Hogston (2003) uncovered that personality was a

better predictor of attrition than cognitive ability. Students scoring lower in agreeableness and conscientiousness were more likely to drop out of the program. Moses et al. (2011) discovered that freshman college students who scored high in openness were more likely not to drop out of an engineering program. Additionally, students possessing calculus readiness or high high-school GPAs were more likely to remain in school. See Table 4 for a summary of academic success/attrition predictors.

Table 4

*Predictors of Academic Success and Attrition*

Author	Topic	Predictors of Success
Karimi	Predictors of Academic Success at the University	Gender (female) Agreeableness Full-time (younger student)
Wolff, Wood-Kustanowitz, & Ashkenzi	Community College Student Performance	Fewer Work Hours Academic Preparedness
Rosander & Backstrom	Swedish High School Student Performance	IQ Conscientiousness Neuroticism
Diseth	Personality Indirect Predictor of Academic Achievement	Conscientiousness
Deary, Watson, & Hogston	Nursing Student Attrition	High Attrition Low Conscientiousness Low Agreeableness

Moses et al.	Engineering Student Attrition	Low Attrition High High-School GPA Calculus Readiness High Openness
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### **Business Student Personality**

Logue et al., after discovering that Big Five traits were related to major satisfaction, recommended that advisors and counselors use the FFM as part of the degree selection process (2007). Although several studies exist in regard to personality and business majors, few studies have been carried out with FFM inventories (Lounsbury et al., 2009). Furthermore, little research has been done within business disciplines, each of which has varying degree and career requirements. For example, Lakhali et al. (2012) divided business degrees into two clusters: thing-oriented and person-oriented. Thing-oriented degree programs focus on numeric data and procedures and include the accounting, finance, and operations management disciplines. On the other hand, person-oriented majors deal with relationship building and include the disciplines of management, human resource management, marketing, and management information systems (Lakhali et al., 2012). Although the careers associated with each discipline mentioned by Lakhali et al. require both personal and analytical skills (for example, a manager may need to lead a team as well as analyze sales figures), the study indicated that the skills and personality associated with each may vary. Thus, advisors should not necessarily guide students based on the general personality of business students. Although the assumptions of Lakhali's study are debatable in that the degrees that were

selected as either thing or person oriented may not actually fall into those categories (i.e. operations management could be considered a person-oriented degree), a better understanding of personality as it relates to business disciplines and sub-disciplines is clearly necessary.

### Personality Conversion

To better understand business student personality, specifically management and accounting student personalities, the MBTI and the KTS can be related to the Big Five. Since few FFM studies exist, the KTS and MBTI studies can be converted to Big Five traits and used to support the FFM studies. Table 5 lists the relationships between the FFM and MBTI (McCrae & Costa, 2003). The only FFM trait not related is neuroticism. Additionally, Daisley (2011) cites correlations related to the MBTI and the NEO-PI, which is an earlier version of the NEO-PI-R. Both male and female correlations are listed in Table 5.

Table 5

#### *FFM and MBTI Relationship*

Inventory	Relation 1	Relation 2	Relation 3	Relation 4
NEO- PI (R)	Extraversion	Openness	Agreeableness	Conscientiousness
MBTI	Extraversion	Intuition	Feeling	Judgment
Correlation to NEO PI	Introversion Men/Women -.74/-.69	Intuition Men/Women .72/.69	Feeling Men/Women .44/.46	Perceiving Men/Women -.49/-.46

Although conversion is possible, the conversion process has four problems. The first conversion problem is that the neuroticism dimension is missing and only four of the five FFM traits can be compared. Second, trait conversion is not precise since studies vary in their MBTI and KTS results. For example, a study may suggest that accounting students are primarily introverted, but the degree to which students are introverted will vary between studies. Third, the MBTI and NEO-PI items are not 100% correlated, so an MBTI result cannot be directly converted to FFM language. Finally, researchers use different FFM, MBTI, and KTS inventories in their studies and each inventory may vary with regard to reliability and validity. For example, the Five Factor Personality Inventory and the Big Five Inventory differ in their mean Cronbach's alpha, being .87 and .83 respectively (John & Srivastava, 1999; Perugini & Ercolani, 1998), as well as the quantity and style of questions.

### **Business Major and Non-Business Major Personality Differences**

Little literature exists in regard to the business student personality and the FFM. Lounsbury et al. (2009) discovered that undergraduate business students scored higher in extraversion, conscientiousness, and emotional stability (low neuroticism) and lower in agreeableness and openness than non-business students. Logue et al.'s findings confirm these results in that extraversion, conscientiousness and emotional stability were associated with major satisfaction (2007). Since 8 out of the 10 most extraverted jobs are in business (supervisor, for example), these jobs are highly stressful (emotional stability) and require such skills as planning and coordinating (conscientiousness). Thus, it makes sense that students scored high in these traits (Lounsbury et al., 2009). The next study,

which also included undergraduate students, only differed in that conscientiousness was higher in non-business students (Shahzad, Ahmed, & Ghaffar, 2013).

Studies may not completely agree for a few different reasons. First, the Big Five inventories differed. Lounsbury (2009) used the Adolescent Personal Style Inventory while Shahzad (2013) utilized the Big Five Inventory. Since the inventories are not identical, results may differ. Second, the non-business student sample in the Shahzad study was highly technical (engineering and medical), which may impact conscientiousness scores. Finally, 68% of the students were female in the Lounsbury (2009) study and only 19% were female in the Shahzad study. In general, females generally score higher in conscientiousness than men (Berings et al., 2013), which is reflected in the Lounsbury study. Thus, it is unclear if conscientiousness was a dominant business student personality trait. Furthermore, Bealing, Baker, and Russo (2006) note that ESTJ, via the KTS, is the most dominant business type, which translates into high extraversion, low openness, low agreeableness, and high conscientiousness. Table 6 shows a summary of these studies.

Table 6

*Business Student Personality Summary*

Author	Inventory	Topic	Related Traits
Lounsbury et al.	Adolescent Personal Style Inventory (FFM)	Business Compared to Non-Business Majors	High Extraversion High Conscientiousness Low Neuroticism
Logue et al.	Personality Style Inventory for College	Business Major Satisfaction	High Extraversion High Conscientiousness Low Neuroticism

	Students (FFM)		
Shahzad, Ahmed, & Ghaffar	Big Five Inventory	Business Compared to Non-Business Majors	High Extraversion Low Conscientiousness Low Neuroticism
Bealing, Baker, & Russo	KTS	Dominant Business Student Personality	High Extraversion Low Openness Low Agreeableness High Conscientiousness

### **Management Student Personality**

In regard to the FFM, Lakhali et al. (2012) note that minimal research has compared personality to business major choice, and the MBTI has seldom been used to study management majors (Tyagi & Bansal, 2010). Lakhali et al. discovered that students ranking high in agreeableness, low in conscientiousness, and high in openness were likely to select management and human resource management majors (2012). Crews, Bodenhamer and Weaver (2010), investigated which personality traits were common amongst hospitality management students using the True Colors Personality Trait Spectrum and discovered that the “orange” type was most dominant and “green” was the least dominant. After converting to the MBTI (from True Colors), then to the FFM, hospitality management students consistently showed low conscientiousness, openness and agreeableness scores. Tyagi, via the MBTI, concluded that the most common management student type was ESTJ (2008), which converts into extraversion, low openness, low agreeableness, and high conscientiousness. Clearly, personalities vary

between management disciplines, and the traits common to business students differ from those of management students. The findings of the above studies are shown in Table 7.

Table 7

*Management Student Personality Summary*

Author	Inventory	Topic	Related Traits
Lakhal et al.	French Version NEO-FFI	Management, HR Degree Choice	High Agreeableness Low Conscientiousness High Openness
Crews Bodenhamer & Weaver	True Colors	Hospitality Management Student Personality	Low Agreeableness Low Conscientiousness Low Openness
Tyagi	MBTI	Management Student Profile	High Extraversion Low Openness Low Agreeableness High Conscientiousness

### **Accounting Student Personality**

Are accounting student personalities more or less pronounced than management students? Many students select accounting majors based on the “bean-counter” stereotype (Baxter & Kavanagh, 2012), and accounting students have historically possessed the MBTI’s ISTJ personality types (Swain & Olsen, 2012), which mean high introversion, low openness, low agreeableness, and high conscientiousness. Briggs, Copeland, and Hanes (2007) studied accounting students and concurred that ISJT was the



most dominant type. However, many researchers, such as Andon, Chong and Roebuck (2010), Haynes, Briggs, and Copeland (2008), and Kovar, Ott, and Fisher (2003) did not include introversion. Nevertheless, STJ is the most common type; between 35% and 46% of accounting students are SJT's (Briggs, Copeland, & Haynes, 2007). Pringle, DuBose, and Yankey (2010) discovered that introverts were drawn to accounting programs but cite in their literature review conflicting evidence regarding accounting students and the introversion preference. Chacko (1991) and Wolk and Nikolia (1997) claim that accounting students are not necessarily introverted. Introverted students outperformed extraverts in an introductory accounting class (Gul & Steve Chun Cheong, 1993). Conversely, in a managerial accounting course, extraverts outperformed (marginally) introverts (Fallan & Opstad, 2013). Although disagreement remains regarding whether introversion is a dominant type, SJT prevails in the literature.

Swain and Olsen (2012) discovered that ISJ's were drawn to an accounting course while SJ's succeeded at it. Likewise, Booth (1993) discovered that STJ's were drawn to accounting programs while SJ's were peak performers in a managerial accounting course (Fallan & Opstad, 2013). However, SJ's performed poorly in Russo, Mertins, and Ray's study of a managerial accounting class (2013). From the existing studies, STJ appears to be the dominant type. Nonetheless, the results regarding the success rates of SJ types are conflicting. Find a summary of these studies in Table 8 below.

Table 8

*Accounting Student Personality Summary*

Author	Inventory	Topic	Related Traits
Swain & Olsen	MBTI	Historic Accounting Student Personality	High Introversion Low Openness Low Agreeableness High Conscientiousness
Briggs, Copeland, & Hanes	MBTI	Accounting Student Personality	High Introversion Low Openness Low Agreeableness High Conscientiousness
Andon, Chong & Roebuck	MBTI	Historic Accounting Student Personality	Low Openness Low Agreeableness High Conscientiousness
Pringle, DuBose, & Yankey	MBTI	Accounting Student Personality	Introverts Drawn to Accounting Programs
Chacko	MBTI	Accounting Student Personality	Introversion Not Significant
Gul & Steve Chun Cheong	MBTI	Accounting Student Performance: Introvert vs. Extravert	Introverts Outperformed Extraverts in Introductory Accounting Course
Fallan & Opstad	MBTI	Accounting Student Performance: Introvert vs. Extravert	Extraverts Outperformed Introverts in Managerial Accounting Course
Swain & Olsen	MBTI	Accounting Student Performance	Low Openness High Conscientiousness
Fallan & Opstad	MBTI	Accounting Student Performance	Low Openness High Conscientiousness
Russo, Mertins, & Ray	MBTI	Poor Student Performance	Low Openness High Conscientiousness *Poor Performers

### **Personality Development**

Although administrators and advisors should understand how personality and major satisfaction relate in order to improve attrition rates, research should also investigate if traits change over time. With nontraditional students becoming the norm at many universities (many of which have had more stressful life experiences than traditional students), it is important to identify whether environmental factors affect personality. For example, if students in their 40s are more likely to be introverted (hypothetically), the results of a personality assessment would skew towards introversion. Additionally, gender, as it relates to personality, is also a concern for advisors. For example, why do women tend to choose business majors (Lakhal et al., 2012) that primarily are people oriented? Perhaps inherent traits or preferences skew female student towards extraverted majors. Finally, nontraditional students tend to have more work experience than traditional students (National Center for Educational Statistics, 2002), and, if trait development is somewhat dependent on such environmental factors as work experience, perhaps advisors should consider work experience as an influencing agent on personality.

### **Gender**

In general, males and females differ in personality. First, women tend to score higher in neuroticism, agreeableness, and conscientiousness (Kovar, Ott, & Fisher, 2003) than men, where men are apt to score higher in openness to experience than women (Berings et al., 2013; George, Helson, & John, 2011; Lehmann, Allemand, Denissen, & Penke, 2013). Andon, Chong, and Roebuck (2010) and Kovar, Ott, and Fisher (2003) add that women in accounting programs rank higher in the feeling type (agreeableness)

than men. Tyagi (2008) and George, Helson, and John (2011) claim that women are more extraverted than men. In a study of management students, Tyagi and Bansal determined that women ranked higher than men in neuroticism, openness, agreeableness, and conscientiousness (2010). The Big Five traits may differ between the sexes for a variety of reasons, including hormonal variances, genetics and societal roles (Lehmann et al., 2013); regardless, personality differences may help explain why women (or men) select different majors. Additionally, Berings et al. (2013) assert that women outperform men in higher education due to personality, not intellectual differences. Lakhali et al. (2012) noted that females gravitate towards business majors that involve human contact, which supports the argument that women are generally more extraverted than men.

A study by Shahzad, Ahmed, & Ghaffar (2013) conflicts with the previous studies in that women who were business majors ranked lower in extraversion and higher in openness than men; women ranked higher in neuroticism, agreeableness, and conscientiousness. In regard to non-business majors, the results differed. Women ranked higher in openness and agreeableness than men while men were more extraverted, conscientious, and emotionally stable than women. Huber, Poeh, and Brodie (2012) found that female entrepreneurial students ranked lower in neuroticism than males, but the sample size was extremely small ( $n=47$ ). Therefore, considering the previous studies, traits differ along with the genders, but the results are inconclusive. In general, women appear to be more extraverted, agreeable, and neurotic than men, but not in all studies; the details of the different studies are found in Table 9.

Table 9

*Gender and Personality*

Author	Inventory	Topic	Related Traits
Kovar, Ott, & Fisher	MBTI	Accounting Student Personality	Women Higher in: Neuroticism Agreeableness Conscientiousness
Berings et al.	Mowen's Personality Scale (FFM)	Academic Motivation	Men Higher in: Openness
Andon, Chong, and Roebuck	MBTI	Personality Accounting Graduates	Women Higher in: Agreeableness
Tyagi	MBTI	Personality Management Students	Women Higher in: Extraversion
George, Helson, and John	California Psychological Inventory (FFM)	Women's Work Lives	Women Higher in: Extraversion
Tyagi and Bansal	NEO-FFI (FFM)	Management Students	Women Higher in: Neuroticism Agreeableness Conscientiousness Openness
Lakhal et al.	Big Five Inventory	Business Students	Women Higher in: Extraversion
Shahzad, Ahmed, & Ghaffar	French Version NEO-FFI	Business vs. Non-business Students	Business Majors - Women Lower in: Extraversion Women Higher in: Openness Neuroticism Agreeableness Conscientiousness Non-business Majors - Women Lower in: Extraversion Conscientiousness Women High in:

			Neuroticism Openness Agreeableness
Huber, Poech, and Brodie	FFM (Not specified)	Entrepreneurial Education	Males High in: Neuroticism

### Age

Initially, McCrae and Costa maintained a rigid position that Five Factor traits were susceptible to change until the age of 30, at which point they would remain static. However, they would eventually modify their position, claiming that modest changes in traits were possible after the age of 30 (Debast et al., 2014; McCrae & Costa, 2003). In regard to neuroticism, extraversion, and openness, McCrae and Costa cite two longitudinal studies that claim that all three traits decline over time at a rate of less than 1/3 of a standard deviation. These changes in personality, when compared to height change, is like a 6'2" tall man losing one inch from age 30 to 70. Agreeableness and conscientiousness were noted to increase incrementally with age, but no data was provided. Hence, although Big Five traits may change over time, McCrae and Costa believe that the change is negligible (2003).

Srivastava et al. (2003) uncovered similar results as McCrae and Costa but the changes were more pronounced; agreeableness and conscientiousness increased from the age of 31-60 and extraversion, neuroticism, and openness declined during this period. More specifically, conscientiousness changed in men and women after age 30 but at a slower rate than between the ages 21-30, agreeableness in both genders increased more within the 31-60 age group, neuroticism declined significantly in women from age 31-60 (with no change in men), openness declined significantly in both men and women from

age 31-60, and extraversion decreased significantly in women and weakly increased in men in the 31-60 age group (Srivastava et al., 2003). Therefore, personality did not remain static with age. However, Srivastava et al. utilized a database for their cross-sectional study (not longitudinal), which essentially tests for differences between groups of people. Although identifying whether traits differ between age groups has value, longitudinal studies track changes over a period of time, leading to more robust conclusions. Debast et al. (2014) reviewed 17 studies (longitudinal and cross-sectional) and reached similar conclusions as Srivastava et al. (2003) in that neuroticism, extraversion, and openness decreased throughout a lifetime and agreeableness and conscientiousness increased with age. Additionally, environmental factors, such as changes to income or employment status, related to changes in personality (Boyce, Wood, & Powdthavee, 2013).

### **Work History**

Elementary school children do not have stable, vocational interests, but as they mature and reach the age of adolescence, vocational interests are formed and become more predictive (Woods & Hampson, 2010). For example, personality and entrepreneurial behaviors, such as leadership in 14 and 15-year-olds, were determined to be predictors of entrepreneurial behaviors during their vocational years (Wyld, 2011). Therefore, personality “sets people on a career path, the effects, of which one can trace over many decades” (Woods et al., 2013). However, a comprehensive personality model like the FFM is seldom used to guide incoming students towards majors/careers that align with their traits.

As employees continue to interact with different work and social environments, they should expect personality changes, regardless of age, in accordance with context (Scollon & Diener, 2006). For example, neuroticism typically declines and extraversion and conscientiousness increase, regardless of age, in employees who are satisfied with their careers (Hoekstra, 2011; Scollon & Diener, 2006). Tyagi (2008) claims interplay exists between personality and environment and Haynes, Briggs, & Copeland (2008) add that traits are activated by different environments. Furthermore, women who rank high in openness tend to be more involved (sustained career) at work (George, Helson, & John, 2011). In general, work experiences reciprocate with personality, which leads to personality change.

If older, nontraditional students, who typically have more life and work experience than traditional students (Weaver & Qi, 2005) are returning to college, it is reasonable to wonder if their personalities differ from traditional students. Since personality screening is underutilized, incoming traditional students may not yet have enough experience to guide them to a suitable major/career. Most studies regarding the FFM and student major satisfaction focus on traditional, younger students (under the age of 30). However, the research suggests that personality is not static and environmental influences may cause personality change.

### **Summary of the Literature**

In summary, this literature review investigated the personality types of accounting and management students. If common traits were to be discovered, university advisors and administrators could use this information to better guide students into appropriate majors in hopes of reducing attrition rates. No conclusive personality traits were found to



relate to management and accounting students. Although accounting student personality has been more studied via the MBTI and is more pronounced than management student personality, the studies did not all agree as to which traits were most common. STJ's were typically drawn to accounting classes, but few studies addressed their satisfaction with the major. Additionally, evidence revealed that personality changes over time, in part due to environmental factors, especially after the age of 30, and males and females tend to differ in personality, although the results were not conclusive. Via the comprehensive FFM, studies should be completed to better understand which types of students are drawn to accounting and management classes and if these types are related to major satisfaction. The nontraditional student characteristics (gender, age, and work experience) should also be studied to determine the impact that each has on personality and major satisfaction.

## **Chapter 3**

### **Method**

#### **Research Design and Rationale**

The purpose of this study was to investigate if management and accounting student personalities were associated with major satisfaction. Additionally, differences in age, work history, and gender as they relate to selection of major were investigated. Quantitative research via survey instruments that capture students' responses to trait related questions, major satisfaction scores, and demographic information was the most suitable method to complete this study (Creswell, 2009). A correlation analysis was conducted to determine the strength of the relationship amongst the averages of each Big Five trait and mean major satisfaction score. T-tests for independent samples were utilized to determine the magnitude to which males and females differed in their personalities, how students' work history impacted personality, and the differences between older (over 30 years of age) and younger students in regard to personality.

#### **Measures**

The Big Five Inventory (BFI) and the Academic Major Satisfaction Scale (AMSS) were utilized to measure personality and major satisfaction, respectively. Since these survey instruments were previously developed, Creswell (2009) recommends that the validities and reliabilities established by the designers be reported. Reliability, also known as consistency (Jones & Kottler, 2006), is the "degree to which the instrument consistently measures something from one time to another" (Roberts, 2010, p. 151). Validity, or relevance (Jones & Kottler, 2006), is concerned with "drawing meaningful and useful inference from scores on the instrument" (Creswell, 2009, p. 149). Thus, a

survey instrument should consistently measure what it purports to measure while attempting to predict an outcome. The reliability and validity of both the BFI and AMSS survey instruments were described by alpha coefficients and convergent validity measures. The test-retest reliability of the AMSS was also investigated.

Cronbach's alpha measures the internal consistency of an instrument on a scale from 0 to 1 to ensure that similar items are correlated (Tavakol & Dennick, 2011). For example, the statements "I am the life of the party" and "I enjoy being around people" should be highly correlated. Researchers generally accept a score from .70 to .95 for similar items on an instrument (Tavakol & Dennick, 2011). Convergent validity is the degree to which constructs are related to predict outcomes (Trochim, 2006). For example, vocational satisfaction should correlate positively to successful performance appraisals. Correlation coefficient measures the strength of the relationship on a scale from 0 to 1. Acceptable relationships, such as moderate, strong, and very strong relationships, are .4 to .6, .6 to .8, and .8 to 1, respectively (Salkind, 2011).

The Big Five Inventory (BFI), a 44-question FFM inventory, was developed by John, Donahue, and Kentle (1991) as an efficient and flexible alternative to its predecessors (John & Srivastava, 1999). Brief inventories are effective when compared to longer questionnaires in that they reduce participant boredom and fatigue (Burisch, 1984). The inventory contains short phrases such as "I see myself as someone who 1) is talkative, 2) tends to find fault with others, 3) does a thorough job" (see Appendix A). Respondents rate each item on a Likert Scale from 1 to 5, 1 being "disagree strongly" and 5 being "agree strongly." The BFI is freely available to researchers who are not pursuing a profit from its use (see Appendix B) (John, 2009). To determine the reliability and

validity of the BFI, 462 undergraduate students were surveyed. Cronbach's alpha for each dimension was as follows: extraversion (.88), agreeableness (.79), conscientiousness (.82), neuroticism (.84), and openness (.81), with a mean alpha of .83 (John & Srivastava, 1999), which is similar to the NEO-PI-R, with alphas ranging from .86-.92 (Piedmont, 2001). Convergent validity was determined by confirmatory factor analysis; three FFM instruments (BFI, Trait Descriptive Adjectives, and NEO Five Factor Inventory) were compared. The standardized validity coefficients for the BFI were extraversion (.94), agreeableness (.92), conscientiousness (.92), neuroticism (.90), and openness (.92), with a mean of .92 (John & Srivastava, 1999), as shown in Table 10 below.

Table 10

*BFI Reliability and Validity*

	Ext	Agree	Cons	Neur	Open	Mean
Reliability	.88	.79	.82	.84	.81	.92
Validity	.94	.92	.92	.90	.92	.92

The Academic Major Satisfaction Scale (AMSS), a six-question self-report inventory, was developed by Nauta (2007) as a measure of global major satisfaction. Similar to the BFI, the AMSS uses a Likert Scale, and participants respond to brief phrases. Examples of statements on the AMSS are, "I often wish I hadn't gotten this

major” and “I feel good about the major I’ve selected” (Nauta, 2007, p. 451). Permission was obtained to use this inventory (Appendix C), which is located in Appendix D. To determine reliability and validity of the AMSS, Nauta surveyed 195 undergraduate students who had previously declared their majors. The mean coefficient alpha for the AMSS inventory was .94. Upon re-administering the survey two years later, the AMSS coefficient alpha was .90 (Nauta, 2007). Convergent validity was captured by relating the students’ scores from the AMSS with the Career Decision Self-Efficacy Scale, resulting in a correlation of .45 (Nauta, 2007). Both the BFI and AMSS are reliable and valid inventories.

### **Participants and Site**

For this study, a junior college in southwestern Michigan was selected. The population of 922 students consisted of all management and accounting associate’s degree majors or transfer students (Michigan Community College Network, 2014). This site was chosen since the students, in regard to age, are more diverse than in previous business student personality studies. More specifically, 48% of the students who attend the college (representative of various programs), or approximately 4,058 students out of 8,454 total students, are over the age of 25 (National Center of Educational Statistics, 2014). For example, in a comparable study of business students, only 3% of the students were over the age of 25 (Logue et al., 2007). In regard to demographics, the institution is comprised of 74% white students, 4% Hispanic, 11% African American, and 2% Asian (National Center of Educational Statistics, 2014). Based on the management and accounting student population, a confidence interval of 95% and a significance level of .05, which are often utilized in academic studies (Newton & Rudestam, 1999), the sample

size should be 162 students (Raosoft, Inc., 2014). A sample size of 162 is comparable to similar studies such as Logue et al. (2007) and Russel, Mertins, and Ray (2013), which consisted of 164 and 109 students, respectively. Thus, the findings from this study will only be generalizable to the institution, paving the way for future studies.

### **Procedure**

After approval from the college's Institutional Review Board (see Appendix F), the BFI, as well as the AMSS, were administered via random purposeful sampling (Sandelowski, 2000). Classes likely to contain high percentages of management and accounting students, such as Introduction to Business, Business Statistics, Principles of Management, Introduction to Psychology, Human Resource Management, Principles of Marketing, General Accounting, Computerized Accounting and Intermediate Accounting, were selected for the study, but the students within each class were not purposefully selected. The demographic section of the survey (Appendix E) also asked the participants to check an age category instead of directly asking for their ages. For example, age categories were 18-20, 21-25, 26-30, etc. Students under the age of 18 were not allowed to complete the assessment. Survey packets were handed to a student by the instructor; the student then conducted the study by handing out the surveys during scheduled class periods. To minimize response bias, students were able to voluntarily complete the surveys during class time, and then the student proctor collected the surveys and sealed them in an envelope. This method aligns with the work of Lounsbury et al. (2009), Naydenova et al. (2012), and Lakhali et al. (2012). Upon collection of all surveys, the data was entered into Microsoft Excel MegaStat, since this program can perform both

descriptive and inferential statistics. This program was used for both data analysis and graphical display.

### **Hypotheses and Data Analysis**

Several research hypotheses were investigated by this study. The primary research focused on major satisfaction as it relates to the FFM. Since students commonly select majors for a variety of reasons besides personality/major fit, and personality is a predictor of major satisfaction, personality testing is the foundation of the study.

Additional hypotheses dealing with biological and environmental impacts on personality were also investigated.

- Hypothesis 1a: Accounting students will rank high in conscientiousness (>4) and introversion (>4) and low in agreeableness (<2) and openness (<2).
- Hypothesis 1b: Accounting students' scores in both conscientiousness and introversion will each have a positive relationship with the Academic Major Satisfaction Scale (AMSS). The relationship between agreeableness and the AMSS and the relationship between openness and the AMSS will both be negative.

Based on the studies of Swain and Olsen (2012), Briggs, Copeland, and Hanes (2007), and Andon, Chong, and Roebuck (2010), accounting students tend to rank high in introversion and conscientiousness and low in openness and agreeableness. Students possessing these traits may be satisfied with their majors. To test Hypothesis 1a, the mean traits of students were calculated from the BFI assessment. McCrae and Costa (2003) noted that high Big Five scores are those which are higher than 75% of the

population. In this case, 75% of the scale was used to determine high and low scores; therefore, a high score would be greater than 4 and a low score would be less than 2. To test Hypothesis 1b, Pearson's  $r$  correlation analysis was used to test the strength of the relationship between mean trait levels of students and the mean score of the AMSS inventory. This study will use the same method as the Big Five scale to determine high and low AMSS scores; that is, a high AMSS score is one over 4 and a low AMSS score is one under 2. Since the BFI and AMSS inventories provide interval data, Pearson's  $r$  bivariate analysis is the most suitable statistical test (Calkins, 2005), and results are best displayed in a correlation matrix (Salkind, 2011). In a similar study, Logue et al. (2007) used Pearson's  $r$  correlation to determine if vocational interest themes were related to business student major satisfaction, and Lounsbury et al. (2009) utilized correlation (unspecified) to uncover relationships between business student traits and life satisfaction.

- Hypothesis 2a: Management students will rank high in extraversion ( $>4$ ) and low in conscientiousness ( $<2$ ).
- Hypothesis 2b: The relationship between management students' scores in extraversion and the AMSS will be positive, and the relationship between conscientiousness and the AMSS will be negative.

Lakhal et al. (2012) discovered that students who possessed high agreeableness, low conscientiousness, and high openness traits, selected management and human resource management degrees. Tyagi added that management students were highly extroverted (2008). To test Hypothesis 2a, mean traits were calculated from the BFI. Hypothesis 2b



was tested via Pearson's  $r$  correlation analysis, with the results displayed in a correlation matrix similar to that of Louge et al. (2007).

- Hypothesis 3 – Accounting students will score higher in introversion and conscientiousness and lower in agreeableness, neuroticism, and openness than management students.

Based on Hypotheses 1a and 2a, it is reasonable to assume that management and accounting students will differ in regard to their respective personality traits. Lakhali et al. (2012) noted differences in personality as it related to thing (accounting) and person (management) oriented majors. Essentially, this hypothesis may support Hypotheses 1a and 2a. To study Hypothesis 3, a t-test for independent samples was conducted to assess the magnitude of difference between groups, and the results were displayed in a comparative table, which aligns with the Lounsbury et al. (2009) study.

- Hypothesis 4a – Both female accounting and management students will score higher than men in neuroticism, agreeableness, conscientiousness, openness, and extraversion.

Kovar, Ott, and Fisher (2003), Shahzad, Ahmed, and Ghaffar (2013), Tyagi (2008), and Tyagi and Bansal (2010) all reached similar conclusions as Hypothesis 4a. T-tests of independent samples were conducted to measure the magnitude of difference between men and women (results exhibited in a comparative table), which is congruent with the methodology from a similar Lakhali et al. (2012) study.

- Hypothesis 4b – Female management majors will have higher major satisfaction than female accounting majors.

- Hypothesis 4c – Women majoring in management will have higher major satisfaction than men majoring in management.
- Hypothesis 4d – Women majoring in accounting will have less major satisfaction than men majoring in accounting.

Lakhal et al. (2012) determined that women preferred person-oriented majors. Additionally, extraversion is more likely a trait associated with management major satisfaction (Tyagi, 2008), and women are generally more extraverted than men (George, Helson, & John, 2011; Tyagi, 2008). Similar to the Lakhal et al. (2012) study, t-tests of independent samples were utilized. The results were presented in a comparative table.

- Hypothesis 5 – Students who are over the age of 30 will have lower mean scores in neuroticism, extraversion, and openness and higher mean scores in agreeableness and conscientiousness than students who are under the age of 30.

Srivastava et al. (2003) and Debast et al. (2014) reached similar conclusions with their respective studies. A t-test of independent samples was used to determine the magnitude of difference between the groups, and results were displayed in a comparative table.

- Hypothesis 6– Students who have five or more years of work experience will score higher in extraversion and conscientiousness and lower in neuroticism than students with less than five years of work experience.

The interplay between environmental factors and personality tends to lead to changes in personality (Tyagi, 2008), and individuals who enjoy and work diligently in their careers tend to have increased levels of conscientiousness and extraversion, perhaps due

to technical and social interactions, as well as more emotional stability, perhaps due to maturity (Hoekstra, 2011; Scollon & Diener, 2006; Woods et al., 2013). A t-test for independent samples was utilized since the independent variable (work history) is categorical and the dependent variable (personality traits) is continuous (Hartman, 2000). Results were exhibited in a comparative table.

## **Chapter 4**

### **Results**

The aim of this study was to investigate the relationship between management and accounting student personality and major satisfaction. Personality is a predictor of academic success (Rosander & Backstrom, 2014; Tyagi & Bansal, 2010), and students often drop out of college due to dissatisfaction with their major (Ramist, 1981). If personality traits relate to major satisfaction, academic advisors may be able to guide students to appropriate degree programs and thus reduce attrition rates. Additionally, the nontraditional student characteristics of age, gender, and work history were explored.

The Big Five personality trait participant responses were captured with the BFI survey and major satisfaction responses were captured with the AMSS survey. Students in business related classes were given the surveys in a classroom setting where they anonymously completed the surveys. Once the surveys were completed, the students placed them into an envelope that was then sealed. Once all surveys in the class were collected, the surveys were scored, coded, and entered into Microsoft Excel: MegaStat. Hypotheses and research questions were then tested via correlation and t-tests.

### **Data Collection and Demographic Data**

A total of 345 BFI/AMSS surveys were distributed to students in a classroom setting, and 288 surveys were returned, for a response rate of 83%. Of the 288 surveys, 20 students had already completed the survey once and eight were not usable due to missing information. Therefore, 260 usable surveys were collected. A total of 168 of the respondents identified themselves as a management or accounting major; thus, 168 surveys were used for data analysis. Of the participating business students, 120 were

management majors, and 48 were accounting majors. Males accounted for 59 of the management majors and 15 of the accounting majors, while females accounted for 61 of the management majors and 33 of the accounting majors (see Table 11).

Table 11

*Quantity and Students by Discipline, n=168*

Degree	Male Students	Female Students	Total
Accounting	n=15, 20.3%	n=33, 35.1%	n=48, 40%
Management	n=59, 79.7%	n=61, 64.9%	n=120, 60%
Total	n=74, 100%	n=94, 100%	n=168, 100%

Table 12 shows the distribution of age amongst the participants, and Table 13 shows the distribution of work experience amongst the participants. Approximately 38.6% of students (n=103) were ages 30 or above and 61.4% were below the age of 30 (n=165). Additionally, 49.4% of the students (n=83) possessed four years or less of work experience and 50.6% possessed more than four years of work experience (n=85).

Table 12

*Age Categories, n=168*

<b>Category</b>	<b>Quantity</b>	<b>Percent</b>
18 Years of Age	n=9	5.4%
19-24 Years of Age	n=71	42.3%
25-29 Years of Age	n=23	13.7%
30-34 Years of Age	n=17	10.1%
35-39 Years of Age	n=14	8.3%
40-44 Years of Age	n=14	8.3%
45-49 Years of Age	n=9	5.4%
Over 50 Years of Age	n=11	6.5%
Total	n=168	100%

Table 13

*Work History Categories, n=168*

<b>Category</b>	<b>Quantity</b>	<b>Percent</b>
0-4 Years Work Experience	n=83	49.4%
5-9 Years Work Experience	n=30	17.9%

10-14 Years Work Experience	n=15	8.9%
15-19 Years Work Experience	n=11	6.5%
More than 20 Years Work Experience	n=29	17.3%
Total	n=168	100%

### Survey Instrument Reliability

In this study, student personality and major satisfaction were captured using the BFI and the AMSS, respectively. According to the Institute for Digital Research and Education at UCLA, survey instruments with a reliability coefficient of .70 or higher for each dimension are considered to be reliable (2015). To determine if each instrument was reliable (internal consistency), Cronbach's alpha was calculated for each personality trait and the major satisfaction scale. Both instruments were reliable with BFI alphas ranging from .75-.90 and an AMSS alpha of .90, which supports the work of John & Srivastava (1990) and Nauta (2007). See Table 14 for BFI and AMSS reliability.

Table 14

#### *BFI and AMSS Reliability*

Variable	Previous Studies' Cronbach's Alpha	Current Study's Cronbach's Alpha
Extraversion	.88	.82, n=8
Agreeableness	.79	.76, n=9

Conscientiousness	.82	.81, n=9
Neuroticism	.84	.81, n=8
Openness	.81	.75, n=10
Major Satisfaction	.94	.90, n=10

### Descriptive Statistics

Prior to hypothesis testing, the normality of the personality and major satisfaction distributions were examined. A distribution is considered to be normal if both the kurtosis and skew are between -1 and +1 (Schwab, 2005). All five personality traits approximated normal distributions (see Table 15). Major satisfaction was slightly left skewed (see Figure 1); skew (-1.153) and kurtosis (.849) show that the average student was happy with his/her major.

Table 15

#### *Personality and Major Satisfaction Distributions*

Variable	Mean	St. Dev	Min	Max	Skew	Kurtosis
Mean Extraversion	3.320	.770	1.125	5	-.235 Normal	-.410
Mean Agreeableness	4.041	.585	2.111	5	-.487 Normal	-.230
Mean Conscientiousness	3.933	.629	2	5	-.444 Normal	-.480



Mean Neuroticism	2.594	.789	1	4.75	.133	-.313
					Normal	
Mean Openness	3.600	.591	2.1	4.8	.082	-.347
					Normal	
Mean Major Satisfaction	4.243	.854	1.167	5	-1.153	.849
					Left Skew	

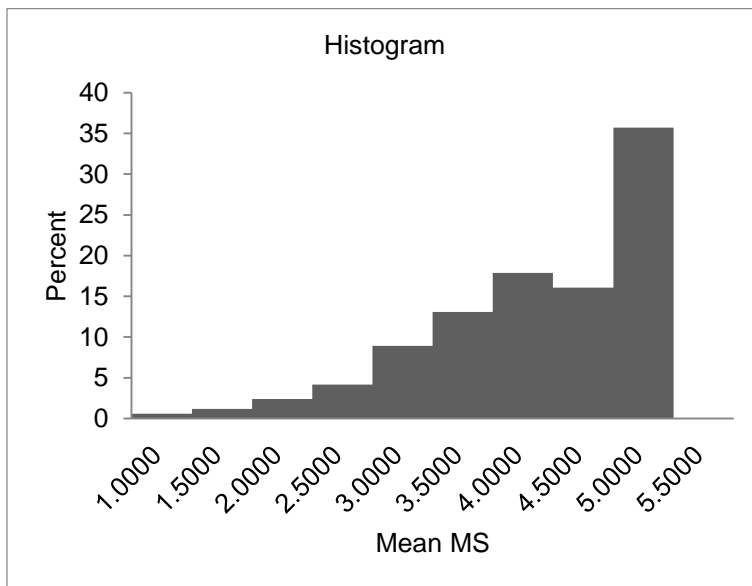


Figure 1. *Major Satisfaction Distribution*

The following hypotheses and research questions were tested.

- Hypothesis 1a: Accounting students will rank high in conscientiousness and introversion and low in agreeableness and openness.

- Hypothesis 1b: Accounting students' scores in both conscientiousness and introversion will each have a positive relationship with the Academic Major Satisfaction Scale (AMSS). The relationship between agreeableness and the AMSS and the relationship between openness and the AMSS will both be negative.
- Hypothesis 2a: Management students will rank high in extraversion and low in conscientiousness.
- Hypothesis 2b: The relationship between management students' scores in extraversion and the AMSS will be positive, and the relationship between conscientiousness and the AMSS will be negative.
- Hypothesis 3 – Accounting students will score higher in introversion and conscientiousness and lower in agreeableness, neuroticism, and openness than management students.
- Hypothesis 4a – Women, in both groups of students, will rank higher than men in neuroticism, agreeableness, conscientiousness, openness, and extraversion.
- Hypothesis 4b – Female management majors will have higher major satisfaction than female accounting majors.
- Hypothesis 4c – Women majoring in management will have higher major satisfaction than men majoring in management.
- Hypothesis 4d – Women majoring in accounting will have less major satisfaction than men majoring in accounting.

- Hypothesis 5 – Students who are over the age of 30 will have lower mean scores in neuroticism, extraversion, and openness and higher mean scores in agreeableness and conscientiousness than students who are under the age of 30.
- Hypothesis 6 – Students who have five or more years of work experience will score higher in extraversion and conscientiousness and lower in neuroticism than students with less than five years of work experience.

Table 16 displays the mean personality trait scores by discipline. Hypothesis 1a was not fully supported; accounting students were moderately high in conscientiousness ( $\bar{x}$  =3.940). Additionally, accounting students (n=49) were moderately high in agreeableness ( $\bar{x}$  =3.935), demonstrated no disposition towards extraversion or introversion ( $\bar{x}$  = 2.961), were slightly emotionally stable ( $\bar{x}$  =2.643) and moderately open to experience ( $\bar{x}$  =3.392). Management students (n=120) were moderately extraverted ( $\bar{x}$  =3.464) and open to experience ( $\bar{x}$  =3.678), highly agreeable ( $\bar{x}$  =4.083), moderately high in conscientiousness ( $\bar{x}$  =3.931), and were slightly emotionally stable ( $\bar{x}$  =2.574). Thus, hypotheses 1a and 2a were not supported.

Table 16

*Personality Means by Major*

Trait	Management Majors n=120		Accounting Majors n=48		Hypotheses 1a and 2a
	Mean	St. Dev.	Mean	St. Dev.	
Extraversion	3.464	.748	2.961	.713	Accounting $\bar{x}$ < 2 Management $\bar{x}$ > 4

Agreeableness	4.083	.567	3.935	.621	Accounting $\bar{x} < 2$
Conscientious	3.931	.625	3.940	.645	Accounting $\bar{x} > 4$ Management $\bar{x} < 2$
Neuroticism	2.574	.800	2.643	.768	NA
Openness	3.678	.594	3.392	.535	Accounting $\bar{x} < 2$

### Correlation Analysis

To test hypotheses 1b and 2b, Pearson's  $r$  correlation was conducted to investigate if management and accounting student personality traits related to major satisfaction. The results are presented in Table 17. Newton and Rudestam (1999) provide guidance in regard to correlation analysis: weak relationships range from .2-.5 while moderate relationships range from .5-.8, and effect sizes include small (.1), medium (.3), and large (.5 or greater).

Hypothesis 1b is partially supported ( $p=.0001$ ): There was a positive relationship between accounting student conscientiousness scores and major satisfaction ( $r=.588$ ), with a medium effect size ( $r^2=.346$ ). However, no relationship was found between introversion, agreeableness, or openness and the AMSS. Hypothesis 2b was not supported. However, a positive relationship ( $p=.0001$ ) between management students' mean conscientiousness scores and major satisfaction ( $r=.349$ ,  $r^2=.122$ ) was present. Neuroticism was negatively related ( $p=.0001$ ) to major satisfaction ( $r=-.309$ ,  $r^2=.095$ ) in the management major sample, and a positive relationship ( $p=.021$ ) existed between

agreeableness ( $r=.186$ ,  $r^2=.035$ ) and major satisfaction. The effect sizes were negligible. Furthermore, the relationship between accounting students' scores in openness and major satisfaction was found to be weakly positive, but the p-value was just slightly beyond the .05 threshold ( $p=.054$ ).

Table 17

*Correlation Matrix: Personality and Major Satisfaction*

Personality Trait	Correlation with Major Satisfaction – Management Students, r	r <sup>2</sup>	P-Value	Correlation with Major Satisfaction – Accounting Students, r	r <sup>2</sup>	P-Value
Extraversion	-.090	.008	.164	.095	.009	.261
Agreeableness	.186	.035	.021*	.157	.025	.144
Conscientiousness	.349	.122	.0001*	.588	.346	.0001*
Neuroticism	-.309	.095	.0001*	-.137	.019	.176
Openness	.036	.001	.350	.235	.055	.054

\*1-tailed.

**Tests of Differences**

To test if accounting and management students differed in their personality traits (hypothesis 3), a t-test for independent samples was conducted, and the results are

displayed in Table 18. Hypothesis 3 was partially supported. Management students ( $M=3.464$ ,  $SD=.748$ ) scored higher in extraversion than accounting students ( $M=2.961$ ,  $SD=.713$ );  $t(166)=3.99$ ,  $p=.0001$ . Management students ( $M=3.678$ ,  $SD=.594$ ) were also more open to experience than accounting students ( $M=3.392$ ,  $SD=.535$ );  $t(166)=2.90$ ,  $p=.0021$ . Both traits had a medium effect size (Becker, 2015) of  $d=.619$  and  $d=.450$ , respectively. Contrary to hypothesis 3, both accounting and management students ranked moderately high in conscientiousness.

Table 18

*Management and Accounting Student Differences in Personality*

Trait	Management Majors n=120		Accounting Majors n=48		t	Cohen's d	P-Value
	Mean	St. Dev.	Mean	St. Dev.			
Extraversion	3.464	.748	2.961	.713	3.99	.619	.0001*
Agreeableness	4.083	.567	3.935	.621	1.49	.231	.0692
Conscientious	3.931	.625	3.940	.645	-.09	.014	.4658
Neuroticism	2.574	.800	2.643	.768	-.51	.079	.6956
Openness	3.678	.594	3.392	.535	2.90	.450	.0021*

\*1-tailed.

To investigate if personality differed between genders, t-tests for independent samples were conducted for both management and accounting students. Results are displayed in Tables 19 and 20, respectively; hypothesis 4a is partially supported. Female management students ( $M=4.036$ ,  $SD=.551$ ) scored higher in conscientiousness than male students ( $M=3.821$ ,  $SD=.680$ );  $t(118)=-1.91$ ,  $p=.0293$ , with a medium effect size,  $d=.352$  (Becker, 2015). Male management students ( $M=2.381$ ,  $SD=.778$ ) also scored lower in neuroticism than female management students ( $M=2.760$ ,  $SD=.782$ );  $t(118)=-2.66$ ,  $p=.0045$ , with a medium effect size,  $d=.490$  (Becker, 2015). In the sample of accounting students, females ( $M=4.077$ ,  $SD=.573$ ) scored higher in conscientiousness than males ( $M=3.637$ ,  $SD=.711$ );  $t(46)=-2.29$ ,  $p=.0134$ , with a large effect size,  $d=.675$  (Becker, 2015). Contrary to hypothesis 4a, women were not more agreeable, extraverted, open, or agreeable in both samples, and women were not more neurotic in the accounting sample.

Table 19

*Management Student Personality Differences by Gender*

Trait	Male Management Majors n=59		Female Management Majors n=61		t	Cohen's d	P-Value
	Mean	St. Dev.	Mean	St. Dev.			
Extraversion	3.470	.720	3.457	.780	.10	.018	.5388
Agreeableness	4.030	.551	4.135	.581	-1.01	.186	.1569
Conscientious	3.821	.680	4.036	.551	-1.91	.352	.0293*
Neuroticism	2.381	.778	2.760	.782	-2.66	.490	.0045*

Openness	3.785	.544	3.574	.626	1.97	.363	.9743
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\*1-tailed.

Table 20

*Accounting Student Personality Differences by Gender*

Trait	Male Accounting Majors n=15		Female Accounting Majors n=33		t	Cohen's d	P-Value
	Mean	St. Dev.	Mean	St. Dev.			
Extraversion	2.933	.763	2.973	.701	-.18	.053	.4294
Agreeableness	3.889	.588	3.956	.643	-.35	.103	.3658
Conscientious	3.637	.711	4.077	.573	-2.29	.675	.0134*
Neuroticism	2.525	.904	2.697	.707	-.71	.209	.2391
Openness	3.580	.497	3.306	.536	1.68	.495	.9498

\*1-tailed.

In regard to hypotheses 4b, 4c, and 4d, men and women did not differ in major satisfaction within and between disciplines. Although Lakhali et al. (2012) noted that women prefer person-oriented (management) majors and men prefer thing-oriented (accounting) majors, the findings from this study do not support this assumption. However, female accounting students had higher major satisfaction than female



management majors ( $M=4.561$ ,  $SD=.598$ );  $t(92)=-.246$ ,  $p=.0078$ , with a medium effect size,  $d=.513$  (Becker, 2015); see Table 21. Tables 22 and 23 show major satisfaction by gender for management students and accounting students, respectively.

Table 21

*Female Major Satisfaction by Discipline*

	Female Management Majors n=61		Female Accounting Majors n=33		t	Cohen's d	P-Value
	Mean	St. Dev.	Mean	St. Dev.			
Major Satisfaction	4.082	1.025	4.561	.598	-2.46	.513	.0078*

\*Note, 1-tailed test in opposite direction of hypothesis.

Table 22

*Management Student Differences in Major Satisfaction by Gender*

	Female Management Majors n=61		Male Management Majors n=59		t	Cohen's d	P-Value
	Mean	St. Dev.	Mean	St. Dev.			
Major Satisfaction	4.082	1.025	4.184	.780	-.61	.112	.7285

Table 23

*Accounting Student Differences in Major Satisfaction by Gender*

	Female Accounting Majors n=33		Male Accounting Majors n=15		t	Cohen's d	P-Value
	Mean	St. Dev.	Mean	St. Dev.			
Major Satisfaction	4.561	.598	4.433	.672	.66	.195	.7430

Finally, the nontraditional student characteristics of age and work history were examined in relation to personality traits. Results are displayed in Tables 24 and 25. Students who were 30 years or older had higher levels of conscientiousness ( $M=4.115$ ,  $SD=.516$ ) than younger students ( $M=3.819$ ,  $SD=.668$ );  $t(166)=-3.04$ ,  $p=.0014$ , with a medium effect size,  $d=.472$  (Becker, 2015). Younger students ( $M=2.759$ ,  $SD=.771$ ) also ranked higher in neuroticism than older students ( $M=2.333$ ,  $SD=.752$ );  $t(166)=3.52$ ,  $p=.0003$ , with a medium effect size,  $d=.546$  (Becker, 2015). Therefore, hypothesis 5 was partially supported; older students were not less extraverted or open.

Table 24

*Personality Differences by Age*

Trait	Students Age 18-29 n=103		Students Age 30+ n=65		t	Cohen's d	P- Value
	Mean	St. Dev.	Mean	St. Dev.			
Extraversion	3.368	.751	3.244	.800	1.01	.157	.1565
Agreeableness	4.035	.585	4.051	.588	-.18	.028	.4285
Conscientious	3.819	.668	4.115	.516	-3.04	.472	.0014*
Neuroticism	2.759	.771	2.333	.752	3.52	.546	.0003*
Openness	3.556	.560	3.658	.635	-1.09	.169	.8619

\*1-tailed.

Hypothesis 6 dealt with differences in personality between students with work experience (five or more years) and students with less than five years of work history. The results are similar to those from hypothesis 5. Students with five or more years of work history ( $M=4.063$ ,  $SD=.575$ ) scored higher in conscientiousness than students with less than five years of work history ( $M=3.801$ ,  $SD=.657$ );  $t(166)=-2.76$ ,  $p=.0033$ . Furthermore, students with five or more years of work history ( $M=2.424$ ,  $SD=.796$ ) scored lower in neuroticism than students with less than five years of work history ( $M=2.769$ ,  $SD=.657$ );  $t(166)=2.89$ ,  $p=.0022$ . Both effect sizes were medium (Becker, 2015),  $d=.428$  and  $d=.449$ , respectively. Thus, hypothesis 6 is partially supported.

Students with five or more years of work experience were not more extraverted or open than students with less than five years of work experience.

Table 25

*Personality Differences by Work History*

Trait	Work History 0-4 Years n=83		Work History 5+ Years n=85		t	Cohen's d	P- Value
	Mean	St. Dev.	Mean	St. Dev.			
Extraversion	3.288	.785	3.351	.759	-.54	.084	.2964
Agreeableness	4.067	.598	4.016	.574	.57	.088	.5715
Conscientious	3.801	.657	4.063	.575	-2.76	.428	.0033*
Neuroticism	2.768	.748	2.424	.796	2.89	.449	.0022*
Openness	3.575	.563	3.616	.619	-.46	.071	.6481

\*1-tailed.

### Multiple Linear Regression

In addition to testing the previously stated hypotheses, a multiple linear regression was conducted to determine if the independent variables of age, gender, work history, or the Big Five traits (mean scores) predicted major satisfaction (dependent variable).

Although the dependent variable has a slightly skewed distribution, Leon (2015) states that it does not need to be normally distributed in a regression analysis.

Conscientiousness was the only predictor of major satisfaction,  $B=.4763$ ,  $t(159)=4.158$ ,  $p=.0001$ .

Table 26

*Regression Output*

variables	coefficients	std. error	t (df=159)	p-value	confidence interval		std. coeff.
					95% lower	95% upper	
Intercept	3.4039	0.8043	4.232	3.90E-05	1.8154	4.9925	0.000
Work History	-0.0532	0.1485	-0.358	.7207	-0.3465	0.2401	-0.031
Gender	-0.0805	0.1328	-0.606	.5455	-0.3428	0.1819	-0.047
Age	0.2441	0.1554	1.570	.1183	-0.0629	0.5511	0.140
Mean E	-0.1640	0.0833	-1.969	.0506	-0.3285	0.0005	-0.148
Mean A	-0.0448	0.1196	-0.375	.7085	-0.2811	0.1915	-0.031
Mean C	0.4763	0.1145	4.158	.0001*	0.2501	0.7025	0.351
Mean N	-0.1416	0.0928	-1.525	.1292	-0.3249	0.0417	-0.131
Mean O	0.0100	0.1104	0.091	.9276	-0.2080	0.2281	0.007

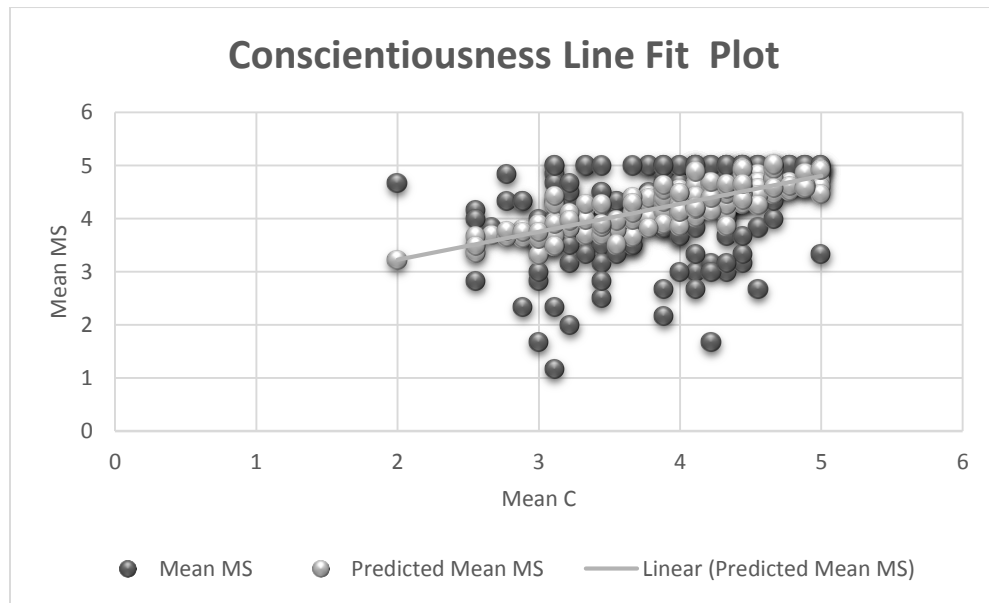


Figure 2. Major Satisfaction/Conscientiousness Regression Line

The extraversion p-value ( $p=.0506$ ) was slightly over the .05 threshold, so two more multiple linear regressions were completed to investigate if extraversion was a predictor of major satisfaction in either the accounting or management disciplines. Only conscientiousness was a predictor in both the accounting ( $B=.7483$ ,  $t(39)=4.932$ ,  $p=.0001$ ) and management ( $B=.4001$ ,  $t(111)=2.789$ ,  $p=.0062$ ) disciplines.

### **Conclusion**

This study examined how management and accounting students' personality traits, as well as nontraditional student characteristics, related to college major satisfaction. Accounting students were less extraverted and open than management students. Both groups ranked moderately high in conscientiousness, which is the one trait related to major satisfaction. In both accounting and management student samples, women scored higher than men in conscientiousness. In the management sample, women scored higher in neuroticism. Furthermore, female accounting students were more satisfied with their major than female management students. Finally, students who were 30 years of age or older scored higher in conscientiousness and lower in neuroticism than the younger group. Likewise, students possessing five or more years of work history scored higher in conscientiousness and lower in neuroticism than the group possessing less than five years of work experience.

## **Chapter 5**

### **Discussion**

The purpose of this study was twofold. First, management and accounting students' personality traits were examined in relation to declared college major satisfaction. College administrators are searching for methodologies that reduce dropout rates, and personality traits appear to be both a predictor of academic success and attrition (Deary, Watson, & Hogston, 2003; Diseth, 2013). Previous studies of business major personality focus on the aggregation of students but not by various disciplines. Second, this study is unique in that nontraditional students are considered. Previous studies typically capture the personalities of younger students who have minimal life experience (Logue et al., 2007; Lounsbury et al., 2009). Srivastava et al. (2003) noted that personality changes after the age of 30, and Scollon and Diener (2006) claim that personality changes in relation to work experience. Additionally, Kovar, Ott, and Fisher (2003) state that personality differs between genders, and Lakhali et al. (2012) claimed that men and women were drawn to particular degree programs. Therefore, this study also examined age, gender, and work history as nontraditional student characteristics.

The descriptive statistics in Table 15 align with previous studies. If management and accounting students are placed under the business degree umbrella, they rank moderately extraverted, highly agreeable, moderate-to-highly conscientious, moderately emotionally stable and moderately open. These results are similar to those of Lounsbury et al. (2009) and Logue et al. (2007) (the Logue study is the most similar to the current study since it investigates major satisfaction). However, if management and accounting students are separated (Table 18), accounting students are not extraverted and are only

slightly open. Therefore, the management and accounting students differ in extraversion and openness, and the management student sample better reflects business student personality than accounting students.

One of the arguments made in this study was that the MBTI, which is used in most studies of accounting student personality, is not reliable because of its dichotomous nature. In previous MBTI studies, accounting students ranked high in introversion, low in openness, low in agreeableness, and high in conscientiousness (Briggs, Copeland, & Hanes, 2007; Swain & Olsen, 2012). In this study, the FFM was used due to its reliability (see Table 14) and non-dichotomy, and the current results conflict with previous studies. Accounting student preference towards introversion was negligible (Table 18). They were moderately open and scored moderately high in agreeableness. These results conflict with previous studies.

Although management and accounting students differed in the extraversion and openness dimensions, both were moderately high in conscientiousness. Conscientiousness predicted major satisfaction in both samples. This finding relates to previous studies in that conscientiousness has been linked to academic success. High school students scoring high in conscientiousness earned higher GPAs than other personality types (Rosander & Backstrom, 2014). Conscientiousness related to high exam scores in undergraduate psychology students (Diseth, 2013), and students with low conscientiousness were likely to drop out of a nursing program (Deary, Watson, & Hogston, 2003).

In regard to nontraditional students, age, gender, and work experience all resulted in significant findings. Women scored higher in conscientiousness than men in both the



management and accounting samples, and men scored lower in neuroticism in the management sample. This result is partially supported by the literature: Tyagi and Bansal (2010) noted that female management students scored higher in neuroticism and conscientiousness than men, and Kovar, Ott and Fisher (2003) found that female accounting students scored higher in conscientiousness and neuroticism than men. Both of these studies were converted from the MBTI. When major satisfaction is considered, female accounting students were more satisfied with their major than female management students. This study disagrees with Lakhali et al. (2012) who claim that females prefer personable degrees (management) to data-driven (accounting) degrees.

Finally, students who are age 30 or older possess higher levels of conscientiousness and lower levels of neuroticism than younger students. Likewise, students who have five or more years of work experience have higher levels of conscientiousness and lower levels of neuroticism than students with minimal work experience. Both results partially align with previous studies (Hoekstra, 2011, Scollon & Diener, 2006, Srivastava et al., 2003). It is unclear if both age and/or work history is primarily responsible for personality differences since older students are more likely to have more years of work experience. Although older students (and students with at least five years of work history) rank higher in conscientiousness than younger students, and conscientiousness relates to major satisfaction, neither age nor work history were predictors of major satisfaction in this study.

### **Contributions to Academe**

This study makes three contributions to academe. First, this study used reliable and valid BFI and AMSS inventories to assess if accounting and management student

personalities were related to major satisfaction. Although previous studies have been performed, they are inconclusive and typically focus on business programs as a whole. Also, the MBTI was predominantly used in college major studies. Second, and most unique, is that this study focuses on nontraditional students. In previous studies of personality and major satisfaction, nontraditional students have not been well represented. For example, both Lounsbury et al. (2009) and Logue et al. (2007) studied business student personality, but only 4% of the students in their samples were over the age of 25. Finally, this study identifies that personality is not consistent between older and younger students. Personality may change over the lifespan, which conflicts with Big Five thought leaders McCrae and Costa who maintain that personality is stable after the age of 30 (2003). Although this study did not fully align with the work of Srivastava et al. (2003), it does support their position that individuals over the age of 30 will differ in personality compared to individuals under that age of 30.

### **Contributions to Profession**

This study contributes to the business profession in three ways. First, human resource managers should abandon the MBTI assessment and use reliable inventories like the BFI in screening processes. Dichotomized scales used by inventories like the MBTI may produce extreme results. For example, a participant scoring 1% extraverted would be entirely identified as an extravert. The BFI is more nuanced and comprehensive than the MBTI and would identify a 1% extraverted respondent as neither extraverted nor introverted, which is a more accurate depiction. Second, management and accounting applicants generally differ in extraversion and openness, and human resource managers should understand these differences. Also, hiring decisions should not be solely based on

personality. For example, accounting students are generally less extraverted than management students, and Pringle, DuBose, and Yankey (2010) argue that accounting students should not expect introverted jobs since the profession is moving in the direction of team engagement and formal presentations. Likewise, management careers will not only require communication skills but will also require data and research analysis, which are skills typically related to introverted workers. Third, human resource professionals who use personality testing in the screening process should assume that personality is not static. Older workers tend to have higher degrees of conscientiousness and emotional stability than younger workers. Therefore, an applicant should never be permanently discarded based on one personality assessment.

### **Implications and Future Study**

This study has several implications. First, college advisors and researchers should use the BFI due to its reliability, brevity, and non-dichotomized questions. Most of the previous studies focused on business student personalities as a whole and were completed via the MBTI, which has been proved to be an unreliable instrument (Pittinger, 2003). This study discovered that accounting students differ from management students in extraversion and openness. Conscientiousness in both groups and emotional stability in the management sample were related to college major satisfaction. Advisors should keep this in mind when screening students for classes. Future studies should address major satisfaction and personality within the various business disciplines using the BFI. Furthermore, personality and college major satisfaction should be studied in relation to attrition rates. Do students that fit with and enjoy their major stay in degree programs?

Studies in this area would benefit university administrators who are continually pressured to reduce student turnover.

Second, this study may explain to some extent why men are considered to be nontraditional in accounting programs (Michigan Community College Network, 2013). Female accounting students had higher college major satisfaction than female management students, and perhaps they are more likely to enter into this degree program. Additionally, females scored higher in conscientiousness than males, and conscientiousness was related to major satisfaction in the accounting sample. Advisors should be aware that both gender and conscientiousness related to accounting major satisfaction. Future studies should investigate how gender impacts major satisfaction in various disciplines.

Third, conscientiousness was both a predictor of major satisfaction and related to accounting and management student satisfaction. During the admissions process, personality testing should be included to find the conscientious trait, especially in management and accounting students. More studies should be completed to determine if conscientiousness is a valid predictor of major satisfaction and academic success across degree programs.

Finally, students who are 30 and above, as well as students who have worked for five or more years, tend to be more conscientious and less neurotic than younger students. Although age and work history were not predictors of major satisfaction, conscientiousness is a predictor and more likely to be possessed by older students. Since previous studies focus primarily on traditional students and academic success or college

major satisfaction (Lounsbury et al., 2009), more studies are needed to better understand nontraditional student personality.

### **Limitations**

This study was subject to assumptions and limitations. Participants were assumed to be honest when completing the surveys. McCrae and Costa (2003) note the risk of dishonesty by the participant when compared to methods such as observer rating or projective assessment. Nonetheless, they claim that self-reporting is the best method to capture traits. Additionally, it was assumed that the results from this study would be generalizable to the business student population and that future studies could replicate the research method and be generalizable to different regions/universities.

This study had several limitations that must be identified. First, the study does not longitudinally measure personality and work history; it only compares mean traits between independent sample groups. Although identifying differences between groups is informative, longitudinal designs are able to capture changes, if any, within an individual over time. Thus, the study focuses on group differences, which may be subject to cohort effects and sampling bias (McCrae & Costa, 2003). Second, the results may only be generalizable to a relatively small region in Michigan and, more specifically, the institution in which the study was conducted. Additional studies, which capture the traits of various ethnicities, cultures, and geographic locations, are needed to adequately generalize these results to a national population.

Third, although the strength of this study when compared to similar studies is that the sample also consists of older students with perhaps more life experience, the sample

consists of students with minimal classroom experience. Junior and senior level students at four-year universities are better able to determine if they are satisfied with their majors. Fourth, the aim of this study is to improve student retention via student/personality fit. Andon, Chong and Roebuck (2010) suggest that accounting students, for example, are not diverse enough in regards to personality traits, primarily consisting of STJ types and that a more diverse group of graduates is needed to improve diversity in the industry. Sixth, this study does not address skills or motivation. For example, accounting programs may require technical skills, such as analyzing data and algebraically modifying financial statements. Thus, personality screening must be used in conjunction with skills and motivational testing.

Seventh, survey fatigue was considered prior to administering the surveys. The BFI and AMSS were selected due to their brevity in conjunction with high reliability and validity scores. Only 50 survey items (BFI and AMSS combined) must be completed by the participants in addition to some demographic items. Eighth, the business disciplines of accounting and management were investigated in this study, but the sub-disciplines were not studied. The facility where the research was conducted only offers accounting and management associate degrees, but it does not offer sub-discipline degrees. Ninth, students could have completed the survey more than one time. For example, a management student is likely to be enrolled in multiple classes and there is a chance that the survey would be conducted in more than one of his/her classes. To combat this problem, the first question of the demographics section of the survey (Appendix E) asks if the student has already completed this assessment. Finally, the survey was only administered in each class one time. Therefore, students who were absent were not able

to complete the survey. Potentially, these students may differ in personality (low conscientiousness for example) when compared to students who were not absent.

### **Conclusion**

One of the major problems facing university administrators is student turnover. Students who are dissatisfied with their major are likely to drop out of college (Ramist, 1981), and personality relates to major satisfaction (Lounsbury et al., 2009). This study was an initial step towards understanding how personality relates to major satisfaction in management and accounting student samples in hopes of reducing student attrition. Previous business student studies seldom address personality across disciplines and use personality inventories like the MBTI. Nontraditional students, who are becoming the norm at many universities, have not yet been well studied. This study investigated how nontraditional students differed from traditional students.

The key findings from this study are as follows. First, management students were more extraverted and open to experience than accounting students. However, accounting students from this study did not fit the traditional, introverted stereotype since they scored as neither introverted nor extraverted. Both management and accounting student samples scored moderately high in conscientiousness, and conscientiousness was the only predictor of college major satisfaction in this study. Women, in both accounting and management student groups, scored higher in conscientiousness than men, and men scored lower in neuroticism than women in the management student sample. Female accounting students were more satisfied with their college major than female management students. Finally, students who are age 30 or older, as well as students who

have worked for five or more years, possess higher levels of conscientiousness and lower levels of neuroticism than younger students.

Since the sample from this study was only generalizable to the Southwest Michigan region, future studies with larger sample sizes should be conducted to better understand how business student personality relates to major satisfaction within the various business disciplines. Also, nontraditional students should be studied to understand how they differ from traditional students and which of their characteristics are related to major satisfaction.



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## Appendix A

## BFI

## How I am in general

Here are a number of characteristics that may or may not apply to you. For example, do you agree that you are someone who *likes to spend time with others*? Please write a number next to each statement to indicate the extent to which you agree or disagree with that statement.

1 Disagree Strongly	2 Disagree a little	3 Neither agree nor disagree	4 Agree a little	5 Agree strongly
---------------------------	---------------------------	------------------------------------	------------------------	------------------------

## I am someone who...

- |   |  |
|---|--|
| 1. ____ Is talkative                            | 23. ____ Tends to be lazy                              |
| 2. ____ Tends to find fault with others         | 24. ____ Is emotionally stable, not easily upset       |
| 3. ____ Does a thorough job                     | 25. ____ Is inventive                                  |
| 4. ____ Is depressed, blue                      | 26. ____ Has an assertive personality                  |
| 5. ____ Is original, comes up with new ideas    | 27. ____ Can be cold and aloof                         |
| 6. ____ Is reserved                             | 28. ____ Perseveres until the task is finished         |
| 7. ____ Is helpful and unselfish with others    | 29. ____ Can be moody                                  |
| 8. ____ Can be somewhat careless                | 30. ____ Values artistic, aesthetic experiences        |
| 9. ____ Is relaxed, handles stress well.        | 31. ____ Is sometimes shy, inhibited                   |
| 10. ____ Is curious about many different things | 32. ____ Is considerate and kind to almost everyone    |
| 11. ____ Is full of energy                      | 33. ____ Does things efficiently                       |
| 12. ____ Starts quarrels with others            | 34. ____ Remains calm in tense situations              |
| 13. ____ Is a reliable worker                   | 35. ____ Prefers work that is routine                  |
| 14. ____ Can be tense                           | 36. ____ Is outgoing, sociable                         |
| 15. ____ Is ingenious, a deep thinker           | 37. ____ Is sometimes rude to others                   |
| 16. ____ Generates a lot of enthusiasm          | 38. ____ Makes plans and follows through with them     |
| 17. ____ Has a forgiving nature                 | 39. ____ Gets nervous easily                           |
| 18. ____ Tends to be disorganized               | 40. ____ Likes to reflect, play with ideas             |
| 19. ____ Worries a lot                          | 41. ____ Has few artistic interests                    |
| 20. ____ Has an active imagination              | 42. ____ Likes to cooperate with others                |
| 21. ____ Tends to be quiet                      | 43. ____ Is easily distracted                          |
| 22. ____ Is generally trusting                  | 44. ____ Is sophisticated in art, music, or literature |

## Appendix B

### BFI Authorization

**Berkeley Personality Lab**  
Director: Oliver P. John

Home People Research **Measures** Contact

### The Big Five Inventory Frequently Asked Questions

The Big Five Inventory (BFI) is a self-report inventory designed to measure the Big Five dimensions. It is quite brief for a multidimensional personality inventory (44 items total), and consists of short phrases with relatively accessible vocabulary.

**Is the Big Five Inventory (BFI) in the public domain and available for use?**  
I hold the copyright to the BFI and it is not in the public domain per se. However, it is freely available for researchers to use for *non-commercial research purposes*. Please keep us posted on your findings.

**Where do I get the Big Five Inventory (BFI)?**  
If you are interested in taking the BFI yourself, please visit [this](#) website, where you can take an online version of the scale that gives you instant feedback.

If you are interested in using the BFI for commercial purposes, please submit a request to [ucbpersonalitylab@gmail.com](mailto:ucbpersonalitylab@gmail.com). At this time, the BFI is for non-commercial uses only.

If you are interested in using the BFI for research purposes, please click [\[here\]](#), which will direct you to the BFI download page. We are trying to create a database for BFI users of publications, relevant findings, and translations of the BFI in an effort to make the scale more useful for users. Thus, before downloading a copy of the BFI and the scoring instructions, please complete a short survey to let us know a little more about who you are and why you want to use the measure. All information will be kept strictly confidential.

**How should I reference the BFI?**

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## Appendix C

## AMSS Authorization

Permission to use AMSS Scale inbox x

**Bradley Ward** <bward11@georgefox.edu>  
to permissions

To whom it may concern,

I am currently a doctoral student at George Fox University and would like to use the AMSS scale (Table 1) from the attached article, Assessing College Students' Satisfaction With Their Academic Majors by Nauta (2007), Journal of Career Assessment 15, (446), when collecting data for my dissertation.

The purpose of my dissertation is to relate Big Five personality dimensions (business students) with the AMSS scale. My research should be completed by the end of 2015 and less than 1,000 students will be surveyed. Also, the research is to complete the dissertation and no income will be earned from the use of the scale.

May I have permission to use the AMSS scale?

Thank you for your time.

Brad Ward

**Journal of Career Assessment**

Assessing College Students' Satisfaction With Their Academic Majors

Journal of Career Assessment 15(4) 446-456

The online version of this article can be found at

http://jca.sagepub.com

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Ch09\_Nauta\_Arti...

**permissions (US)** <permissions@sagepub.com>  
to me

Jul 10

Dear Brad Ward,

Thank you for your request. You can consider this email as permission to use the scale as detailed below in your upcoming dissertation. Please note that this permission does not cover any 3<sup>rd</sup> party material that may be found within the work. We do ask that you properly credit the original source, Journal of Career Assessment. If you wish to distribute the scale online, it must be in a password protected environment. Please contact us for any further usage of the material.

Best regards,  
Michelle Binur

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## Appendix D

### AMSS

**Table 1**  
**Academic Major Satisfaction Scale Items and Effect Sizes**  
**for Mean Differences Between Students Who Remained in**  
**Their Majors Versus Changed Majors in a 2-Year Period**

AMSS Item	Cohen's <i>d</i>
1. I often wish I hadn't gotten into this major.	0.70
2. I wish I was happier with my choice of an academic major.	0.62
3. I am strongly considering changing to another major.	0.56
4. Overall, I am happy with the major I've chosen.	0.55
5. I feel good about the major I've selected.	0.52
6. I would like to talk to someone about changing my major.	0.50

*Note.*  $N = 195$ . AMSS = Academic Major Satisfaction Scale. Respondents rated their agreement with the items using a 5-point Likert-type scale from 1 (*strongly disagree*) to 5 (*strongly agree*). Items 1, 2, 3, and 6 are reverse scored.

## Appendix E

### Demographic Survey Questions

Is this your first time completing this survey?

- Yes
- No

Select your current major or field of study. If pursuing more than one degree, select your main field.

- Business Management
- Accounting
- General Studies
- Health Care
- Art
- Law Enforcement
- Elementary Education
- Science
- Other

How many years of work experience do you have?

- 0-4 years
- 5-9 years
- 10-14 years
- 15-19 years
- More than 20 years

What is your gender?

- Male
- Female

What is your age?

- 18 or under
- 19 to 24
- 25 to 29
- 30 to 34
- 35 to 39
- 40 to 44
- 45 to 49
- Over 50

Appendix F

IRB Approvals



DATE: March 23, 2015

TO: Brad Ward

FROM: Naomi Livengood, IRB Chair

RE: IRB Application 2015-02\_Academic Major Satisfaction Scale and the Big Five Inventory

It has been determined that your IRB request is classified as expedited. Therefore, members of the Kellogg Community College Institutional Review Board (IRB) were convened and have reviewed your application for using human subjects to conduct student surveys according to your IRB application and Research Proposal on Nontraditional Students in Management and Accounting Programs: Investigating the Relationship between Personality and Major Satisfaction in the Community College Setting.

Your request is approved and will remain active for six months. Please contact me for an extension if your project should require more time.

It is your obligation to inform the IRB of any changes in your research protocol that would substantially alter the methods and procedures reviewed and approved by the IRB in your application. Your project has been assigned a project number of 2015-02 which you should refer to in future communications involving this research project.

Also, the IRB requires follow-up reports for all research protocols as mandated by the Code of Federal Regulations, Title 45 for using human subjects in research. The follow-up report template is attached or can be requested from my office when your project is complete.

Thank you for your compliance with these guidelines and best wishes for a successful research endeavor.

GEORGE FOX UNIVERSITY
HSRC INITIAL REVIEW QUESTIONNAIRE
Page 6

Title:

Nontraditional Students in Management and Accounting Programs: Investigating the Relationship between Personality and Major Satisfaction in the Community College Setting

Principal

Researcher(s): Brad Ward

Date application completed: Mar 20, 2015

COMMITTEE FINDING:

1) The proposed research makes adequate provision for safeguarding the health and dignity of the subjects and is therefore approved.

2) Due to the assessment of risk being questionable or being subject to change, the research must be periodically reviewed by the HRSC on a basis throughout the course of the research or until otherwise notified. This requires resubmission of this form, with updated information, for each periodic review.

3) The proposed research evidences some unnecessary risk to participants and therefore must be revised to remedy the following specific area(s) of non-compliance:

[Blank lines for non-compliance details]

4) The proposed research contains serious and potentially damaging risks to subjects and is therefore not approved.

Chair or designated member [Signature]

Date 3/21/15