

BROAD AND NARROW PERSONALITY TRAITS AS PREDICTORS OF  
ACADEMIC PERFORMANCE

by

Michael D. Glenn, II

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Thesis Committee:

Dr. Richard G. Moffett III, Chair

Dr. Michael Hein

## ABSTRACT

The current paper address the importance of personality trends in predicting academic performance. The archival data set for this study consisted of 189 participants drawn from the university's online research system at a state university in the southeastern United States. The aim of the study was to investigate the importance of noncognitive factors as predictors of academic performance. In particular, this study examined the relationship between personality traits, as assessed by the International Personality Item Pool (IPIP) version of the Revised NEO Personality Inventory (NEO-PI R), and academic performance (International Personality Item Pool, n.d.). In addition, this study contributes to the existing research by examining which personality factors best predict academic performance. The benefits of this study include providing a basis for further research of noncognitive factors in the selection system of a university in the southeastern United States.

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## CHAPTER I

### INTRODUCTION

#### **Broad and Narrow Personality Traits as Predictors of Academic Performance**

In selection systems, such as college admissions, it is critical to ensure an accurate estimation of a student's potential is consistently obtained. In broad terms, predictors of academic performance may include cognitive and noncognitive variables. This paper argues that there are important reasons for researching predictors of academic performance beyond those cognitive variables traditionally used (e.g., high school GPA, ACT, SAT). Komarraju, Ramsey, and Rinella's (2013) recent research is presented as support for researching predictors of academic performance beyond cognitive variables. They found that, on average, 4-year degree-granting institutions lose nearly one-third of incoming freshmen after their first year. It appears that going beyond traditional selection measures may yield incremental validity in the college selection system. In addition, a better understanding of the determinants of college performance may prove useful in the creation of targeted interventions specific to the demographics of a state university in the southeastern United States.

Another statistic that highlights the importance of furthering the understanding of the determinants of college success is demonstrated in recent research by Yakovlev and Leguizamon (2012). Yakovlev and Leguizamon found that earning a college degree is linked to an increased sense of well-being. Specifically, they found a correlation ( $r = .70, p = .05$ ) demonstrated between the subjective well-being (measured by the Gallup-

Heathways Well-Being Index) and earning a college degree. Considering the amount of incoming freshman lost after their first year and the strong relationship between earning a college degree and experiencing a sense of well-being it is important to understand the determinants of college success. While it is beyond the scope of this study to test the mediating variables between the experience of well-being and earning a college degree, this study seeks to provide further evidence for a relationship between noncognitive predictors and academic performance. Specifically, this study examines personality based on the five-factor model as a predictor of academic performance as measured by self-reported GPA.

Aside from the practical implications of predicting academic performance, this study draws on the framework developed by Ackerman and Beier (2003) for describing intellectual development as “intelligence as process, personality, interests, and knowledge (PPKI)” (p. 211). Specifically, Ackerman and Beier’s theory of PPKI states that “ability (or intelligence-as-process) is directed by personality and interest traits toward specific domains” (p. 211). As it relates to this study, Ackerman and Beier provide a theoretical foundation for examining noncognitive predictors of academic performance. Therefore, one outcome of this theory is that personality affects knowledge acquisition—and, consequently, academic performance—by influencing an individual’s desire to choose intellectually stimulating environments. Determining the personality traits that will influence a person to excel in intellectually stimulating environments is of consequence to this study. Based on a review of the research that will follow, I believe that, in general,

conscientiousness will affect an individual's performance after he or she is placed in intellectually stimulating environments. If this is true, then individuals with higher levels of conscientiousness should experience higher levels of academic performance. Before examining research related to personality as a predictor of academic performance, this paper explores traditional predictors of academic performance. In addition, noncognitive predictors apart from personality will receive discussion as will the FFM as a framework for examining broad and narrow personality traits.

### **Traditional Predictors of College Academic Performance**

Traditional predictors of college academic performance include standardized achievement tests (e.g., SAT, ACT) and high-school GPA. Richardson, Abraham, and Bond (2012) found that the strength of the relationship between SAT score and college academic performance was  $r = .29$ , with a sample size of  $n = 22,289$ . A research report sponsored by the College Board found that the SAT, as a whole, had a positive correlation ( $r_{adj} = .53$ ,  $n = 151,316$ ) with first-year college GPA (Kobrin, Patterson, Shaw, Mattern, & Barbuti, 2008). The ACT is another selection device used by some colleges. Richardson et al. found that the strength of the relationship between ACT and college academic performance was  $r = .40$ , with a sample size of  $n = 31,971$ . Summarizing the overall research, Schmitt et al. (2009) found that the SAT and ACT consistently demonstrated a positive correlation, averaging  $r = .45$ , with cumulative college GPA.



High school GPA is another typical predictor used to determine admissions. Kobrin et al. (2008) found that high-school GPA had a positive correlation ( $r_{adj} = .54, n = 151,316$ ) with first-year college GPA. Richardson et al. (2012), using meta-analysis, found high-school GPA to have a positive correlation with college academic performance ( $r = .40, p < .01, n = 34,724$ ). Given the thoroughness of these studies, a relationship appears to exist between high school GPA and college academic performance.

Although these traditional predictors have a demonstrated positive relationship with college GPA, there is room for improvement. In other words, improvements in reducing adverse impact in college admissions and explaining more of the variance in college GPA may be achieved by adding additional measures. Historically, minority students have scored lower on standardized achievement tests, such as the ACT and SAT (Schmitt et al., 2009). By contrast, noncognitive assessments have generally shown little to no difference among majority and minority groups (Schmitt et al., 2009). The literature has examined several noncognitive predictors of academic performance, and personality is one such example of a noncognitive predictor.

## **Introduction to Noncognitive Predictors of College Academic Performance**

Personality is not the only type of noncognitive predictor researchers have examined. Intrinsic motivation is a possible noncognitive predictor of GPA. Komarraju, Karau, and Schmeck (2009) investigated predicting GPA with a measure of intrinsic motivation (Academic Motivation Scale). Komarraju et al. used regression analyses and found that intrinsic motivation explained approximately 4% of the variance in GPA. Another example of a noncognitive predictor is academic discipline. Robbins, Allen, Casillas, Peterson, and Le (2006) defined the construct of academic discipline as “the amount of effort students put into schoolwork and the degree to which they see themselves as willing to work hard to complete homework and academic assignments” (p. 613). Robbins et al. found academic discipline to be a significant predictor ( $\beta = .207$ ,  $p < .01$ ) of GPA after controlling for several important extraneous variables (i.e., gender, race, differences among participating institutions). Although intrinsic motivation and academic discipline appear to offer promising results, a significant amount of variance remains unaccounted for among these predictors and GPA earned. A portion of the remaining variance may be explained by personality.

## **Introduction to a Five-Factor Model of Personality**

The five-factor model (FFM) consists of five traits, typically labeled openness to experiences, conscientiousness, extraversion, agreeableness, and neuroticism. The FFM is based on the lexical hypothesis (Barrick & Ryan, 2003). Lexicon refers to the

vocabulary of a given language. Early personality researchers (e.g., Allport & Odbert, 1936) advanced the lexical hypothesis and suggested the relative importance of a given attribute was congruent to its representation within a lexicon. Allport and Odbert's research was an attempt to categorize the English lexicon using psychological terms. A great deal of meta-analytic research supports the FFM as a robust framework for describing the structure of personality (Digman, 1990). While other models exist, the FFM is a widely used model and was used as a framework in this study. This framework served as a guide to exploring personality and making predictions regarding the factors that have the strongest relationship with academic performance as measured by self-reported GPA.

### **Rationale for Examining Personality at the Factor and Facet Level**

This study examines a broad criterion of self-reported GPA. A debate exists between using broad- or narrow-level personality traits when predicting broad outcomes. Ones and Viswesvaran (1996) argued for using broad-level domains to predict overall job performance and cautioned that adding additional measures merely captures increased error. By contrast, Christiansen and Robie (2011) found a slightly stronger relationship between personality and overall job performance when using facet-level traits, even after correcting for chance. While some research suggested matching independent and dependent variables in terms of specificity (Ajzen & Fishbein, 1977), other research

(Christiansen & Robie, 2011) suggested the opposite. Given these contrary opinions, this study explored personality at the factor and facet levels.

### **Rationale for Using Conscientiousness as a Predictor of GPA**

Personality has been shown to predict a wide variety of outcomes (Ozer & Benet-Martinez, 2006). Research has demonstrated a relationship between personality and job performance. Specifically, Barrick and Mount (1991) found conscientiousness consistently related to job performance in a variety of settings. If GPA is considered a type of measure of college students' job performance, it is reasonable to expect that conscientiousness will be a statistically significant predictor of GPA. Several studies (Busato, Prins, Elshout, & Hamaker, 2000; Nguyen, Allen, & Fraccastoro, 2005; Wagerman & Funder, 2007) have examined personality and GPA and have found a significant positive relationship between the two variables. Specifically, conscientiousness appears to relate consistently to academic performance. The participants from the Busato et al. (2000) study were selected from the University of Amsterdam. In this educational institution, students are required to obtain certain numbers of study points. Busato et al. defined academic success as the number of study points achieved by the ends of years 1, 2, and 3 and the grade on the student's first examination. In this study, the relationships varied from  $r = .16$  to  $.21$  with conscientiousness and academic success. In the same study, the strongest significant negative relationship was found between extraversion and first examination ( $r = -.13, p$

< .001). Nguyen et al. (2005) found the strongest relationship between conscientiousness and GPA ( $r = .18$ ). The same study found the strongest negative relationship between extraversion and GPA ( $r = -.08$ ). Wagerman & Funder (2007) specifically examined conscientiousness and found it to be significantly related to GPA of senior level college students. ( $r = .14$ ). The most extensive work referenced in this study (Richardson et al., 2012) found conscientiousness to have the strongest relationship ( $r = .19, n = 27,875$ ) with college academic performance. The same study calculated a 95% confidence interval of .17 to .22 for the correlation between conscientiousness and college academic performance (Richardson et al., 2012).

### **Facet Level of Conscientiousness**

The facet level of conscientiousness consists of six scales, typically labeled competence, order, dutifulness, achievement striving, self-discipline, and deliberation. Christiansen and Robie (2011) found that fewer than 5% of studies published since 2003 in the *Journal of Applied Psychology* and the journal *Personnel Psychology* considered the narrow traits of the FFM. Chamorro-Premuzic and Furnham (2003) conducted one example of a study that reported the relationships between the subscales of the NEO-PI-R and students' academic examination scores. Chamorro-Premuzic and Furnham averaged the scores for the three exams (representing academic performance), and obtained correlations with the subscales of dutifulness and achievement striving ( $r = .38, p = .01$ ;  $r = .35, p = .01$ ), respectively. Possibly, a combination of high achievement striving and

dutifulness in a person lends itself to setting challenging goals (achievement striving) and feeling deeply committed to completing those goals (dutifulness). Although dutifulness and achievement striving were significantly related to academic performance, so too were the facets of competence, order, and deliberation (Chamorro-Premuzic & Furnham, 2003). In a study by Gray and Watson (2002), the facets of achievement striving and self-discipline showed the strongest relationships with college GPA ( $r = .39, p < .01$ ;  $r = .36, p < .01$ ). In the same study, using regression analysis, the researchers found self-discipline not to be a significant predictor when included in a model with achievement striving (Gray & Watson, 2002). The previously discussed findings lend support to achievement striving having a significant positive relationship to academic performance.

### **Rationale for Using Neuroticism as a Predictor of GPA**

Increased levels of neuroticism can be exemplified by higher levels of anxiety and reduced ability to delay gratification (Richardson et al., 2012). In a meta-analysis investigating learning strategies, Richardson et al. (2012) reported that test anxiety and effort regulation were significantly related to GPA ( $r = -.24, p < .01$ ;  $r = .32, p < .01$ ), respectively. In the same study, *test anxiety* was defined as “negative emotionality relating to test-taking situations,” and *effort regulation* was defined as “persistence and effort when faced with challenging academic situations” (Richardson et al., 2012, p. 357).

Given these significant relationships, neuroticism may negatively affect GPA by influencing learning strategies. Richardson et al. (2012) found a near-zero correlation

between neuroticism and GPA ( $r = -.01, p < .01$ ). In contrast to this finding, Chamorro-Premuzic and Furnham (2003) demonstrated a stronger relationship ( $r = -.16, p < .05$ ) between neuroticism and academic performance (as measured by an average of three exam scores). In addition, Chamorro-Premuzic and Furnham found stronger relationships at the facet-level versus the factor-level for neuroticism. Specifically, the facets of anxiety and impulsiveness demonstrated a stronger relationship ( $r = -.29, p < .01$ ;  $r = -.26, p < .01$ ), respectively with academic performance (Chamorro-Premuzic & Furnham, 2003).

### **Introduction to GPA as a Measure of Academic Performance**

The use of GPA in research is not without its critics (e.g., Goldman, Flake, & Matheson, 1990; Johnson, 1997). As noted by Johnson (1997), grade inflation is a potential problem in using GPA in research. Goldman et al. (1990) found that freshmen overestimated their GPAs. While Goldman et al. raised valid concerns about this phenomenon, the correlation between actual GPA and self-reported GPA is of primary importance to this study. In general, robust, statistically significant, Pearson product-moment correlations have been demonstrated among actual GPA and self-reported GPA. For example, Cassady (2001) found a significant positive correlation ( $r = .97, p < .01$ ) between the two. Although Cassady reported a robust correlation, the study's validity was limited by a relatively small sample size ( $n = 75$ ). In a similar study, Herman and Nelson (2009) found the relationship between actual GPA to be positively and

significantly correlated with self-reported GPA ( $r = .91, p < .01, n = 344$ ). Kuncel, Credé, and Thomas (2005) conducted a large meta-analysis ( $n = 12,089$  subjects) and found the relationship between actual GPA to be positively and significantly correlated ( $r = .90, p < .05$ ). In addition, Kuncel et al. calculated a 90% confidence interval for the relationship between self-reported and actual GPAs, and found the correlation to be between .82 and .98. Intuitively, any self-reported measure will contain error; however, research suggests that a very strong relationship exists between actual and self-reported GPAs among college students.

### **Relationship between Early- and Late-Academic Career GPAs**

This study measures academic performance based on self-reported GPA early in one's college career. Of consequence to the utility of this study is the relationship between GPAs in early versus late academic career. Early research noted that independently calculated GPA correlations diminish as a function of time (Humphreys, 1960). Later research investigating what Humphreys called the *simplex decline of correlations* found the same pattern (Butler & McCauley, 1987). Although the simplex decline held true for Butler and McCauley's research (i.e., independently calculated freshman GPA correlates best with sophomore GPA, sophomore GPA with junior GPA, and junior GPA with senior GPA), the correlation between freshman GPA and senior GPA was strong ( $r = .89, p < .05$ ). This finding supports the utility of examining



variables that predict first-year GPA because research suggests that early- and late-academic career GPAs are positively correlated.

### **Hypotheses**

As a result of the previously discussed findings, this study examined conscientiousness as a factor and examined the facet level (i.e., achievement striving) for which data were available for analysis. The following hypotheses were tested:

*Hypothesis 1:* Conscientiousness will be positively and significantly related to academic performance.

*Hypothesis 2:* Achievement striving will be positively and significantly related to academic performance.

*Hypothesis 3:* Neuroticism will be negatively and significantly related to academic performance.

*Hypothesis 4:* Conscientiousness will have a stronger relationship than neuroticism with academic performance.

## CHAPTER II

### METHODS

#### **Participants**

The archival dataset was collected using the university's online research system. Participants were asked four quality assurance items as a safeguard against careless responses to questions. An example of a quality assurance item was "For quality assurance purposes, please mark "not true" for this question." Those participants that answered less than 3 of the 4 quality assurance items were excluded from the study. This data set included 380 participants of those 315 correctly responded to at least 3 of the 4 quality assurance items. This data set included academic performance data for 314 participants; however, of those 125 indicated they were not sure of their GPA. Those participants that indicated they were not sure of their GPA were excluded. After both quality assurance and GPA exclusions were applied data on 189 participants remained. These remaining participants' responses were examined for missing data on the Conscientiousness, Neuroticism, and Achievement Striving scales and 8 participants were excluded that did not complete all items for each of these scales. After all exclusions from the study data were available for 181 participants. With this sample size the achieved power was .85 and .98 for the correlation and regression analyses respectively. The dataset included a measure of the FFM, which was closely correlated

with the NEO-PI R and a measure of academic performance as assessed by self-reported grade point average.

### **Design**

This study was a nonexperimental design, investigating the association between personality and self-reported GPA. The independent variables examined in this study included *conscientiousness*, *neuroticism*, and *achievement striving*. The dependent variable was *self-reported GPA*. The data for this study were from an archival data set collected from students enrolled in a university in the southeastern United States.

### **Procedure**

The data were collected as part of a larger study by Watts (2012) who described the procedure as the following:

An online questionnaire was developed and made available to participants in the university's psychology research pool (SONA) and in psychology courses. Participants were provided an internet link to the on-line survey which was administered via Survey Monkey. Every item on the questionnaire was voluntary, allowing participants to skip items if they chose. The questionnaire contained approximately 100 items that were part of a larger survey. As an incentive for completing the survey, students received research credits that counted towards fulfilling academic requirements or extra credit in their classes (p. 18).

### **Measures**

**Rating scale.** The following scale was used to rate personality items: Very inaccurate, Moderately inaccurate, Neither inaccurate nor accurate, Moderately accurate, and Very accurate from 1 to 5 respectively.

**Achievement Striving.** The 10-item version of the NEO-PI-R 5 Dimensions from IPIP was used to assess constructs similar to the NEO-PI-R. This questionnaire consisted of 10 items per dimension; however, the archival data only contained data on the facet of achievement striving. The IPIP scale of achievement striving has demonstrated a corrected correlation of  $r = .97$ , with the corresponding NEO-PI-R scale of achievement striving (NEO Facets Table, n.d.). The following is an example item from the achievement striving scale: “I plunge into tasks with all my heart” (NEO Facets Key, n.d.). The achievement striving scale in this study demonstrated a Cronbach’s alpha of .85.

**Conscientiousness and Neuroticism.** The IPIP scales of conscientiousness and neuroticism has demonstrated a corrected correlation of  $r = .92$ , with the corresponding NEO-PI-R scale (NEO Domains Table, n.d.). The following is an example item from the conscientiousness scale: “I pay attention to details” (NEO Domains Key, n.d.). The following is an example item from the neuroticism scale: “I often feel blue” (NEO Domains Key, n.d.). The conscientiousness and neuroticism scales in this study demonstrated a Cronbach’s alpha of .82 and .79 respectively.

The IPIP measures are based on NEO-PI-R, which is a psychometrically valid instrument, designed to assess normal adult personality as structured by the FFM. The NEO-PI-R includes scales for both domain and facet levels. According to Botwin’s (1995) review, which appeared in the twelfth edition of the *Mental Measurements*

*Yearbook*, the test is reliable and demonstrates domain-level reliabilities ranging from .86 to .95 and facet level reliabilities ranging from .56 to .95. The test norms were developed using a representative sample of 1,000 subjects stratified to match the 1995 U.S. Census (Botwin, 1995). Closing comments by Botwin included, “There are few shortcomings in the NEO-PI-R” (Para. 10). According to Juni’s (1995) review of the NEO-PI-R, which appeared in the twelfth edition of *Mental Measurements Yearbook*, stated that it is “a reliable and well-validated test of personality features” (Conclusion section, Para. 1). Overall, given the positive reviews of the NEO-PI-R and the strong correlations between it and the IPIP measures, it appears that the IPIP measures will be fully adequate for the purpose of this study.

**Academic performance.** Academic performance was assessed using a self-report measure of GPA. Participants were asked, “What is your overall college GPA?” (Less than 2.0, 2.0–2.5, 2.6–3.0, 3.1–3.5, 3.6–4.0, Not sure)” (Watts, 2012, p.21).

## CHAPTER III

### RESULTS

#### Demographics

The majority of the participants were women (68%), and the primary ethnicity reported was Caucasian/White (74%), followed by African American/Black (17%), Asian (4%), Hispanic (4%), and other ethnicities (4%). Most participants were 19 years of age (28%), ranging from 18 to 35 years. Most participants (72%) indicated they had some college education. Most participants were Freshman (37%), followed by Sophomore (31%), Junior (23%), and Senior (9%).

#### Hypothesis Tests

To test the first hypothesis that conscientiousness would be positively and significantly related to academic performance the data were examined using the Pearson product–moment correlation. The analysis demonstrated a significant relationship ( $r = .27, p < .01$ ) between the variables.

To test the second hypothesis that achievement striving would be positively and significantly related to academic performance the data were examined using the Pearson product–moment correlation. The analysis demonstrated a significant relationship ( $r = .23, p < .01$ ) between the variables.

To test the third hypothesis that neuroticism would be negatively and significantly related to academic performance the data were examined using the Pearson product-moment correlation. The analysis demonstrated a significant relationship ( $r = .12, p < .05$ ) between the variables. The values of Cronbach alpha and basic descriptive statistics are shown in Table 1.

Table 1

*Coefficient Alpha Scale Reliabilities and Descriptive Statistics (N = 181)*

Variable	$\alpha$	<i>M</i>	<i>SD</i>
Achievement Striving	.85	41.17	5.90
Conscientiousness	.82	42.40	6.82
Neuroticism	.79	23.45	6.55
Overall GPA		3.56*	1.10

*Note:* SD = Standard Deviation. \*GPA measured in ranges 1.00 = Less than 2.0; 2.00 = 2.0 - 2.5; 3.00 = 2.6 - 3.0; 4.00 = 3.1 - 3.5; 5.00 = 3.5 - 4.0.

Correlations between the independent variables and the dependent variable are presented in Table 2. One reason the correlation between achievement striving and conscientiousness ( $r = .82, p < .01$ ) is high is due to the conscientiousness scale containing an item from the achievement striving scale.

Table 2

*Correlations between personality variables and GPA*

Measure	1	2	3
1. Achievement Striving			
2. Conscientiousness	.82**		
3. Neuroticism	-.28**	-.33**	
4. GPA	.23**	.27**	-.12*

*Note:* \*\* $p < .01$  (1-tailed) \* $p < .05$  (1-tailed)

To test the fourth hypothesis, GPA was regressed on the two factors of conscientiousness and neuroticism. The model as a whole was significant ( $F = 6.84$ ,  $p < .01$ ). Conscientiousness was a significant predictor; however, neuroticism was not a significant predictor.

Table 3

*Regression Analysis Summary for Personality Variables Predicting GPA*

Variable	<i>B</i>	<i>SEB</i>	$\beta$
Conscientiousness	.040	.012	.251**
Neuroticism	-.007	.013	-.038

*Note:* \*\* $p < .01$



## CHAPTER IV

### DISCUSSION

Overall, the results were as hypothesized. The results of this study replicate the findings of Busato et al. (2000) to a different demographic sample. Busato et al. (2000) selected participants from the University of Amsterdam and found the relationships varied with correlations of .16 to .21 with conscientiousness and academic success respectively. This study found similar results in a sample from a university in the southeastern United States ( $r = .23, p = .01$ ). Similar to Chamorro-Premuzic and Furnham's (2003) research that demonstrated a significant positive relationship with achievement striving and academic performance ( $r = .35, p = .01$ ) this study found a significant relationship ( $r = .27, p < .01$ ). Where Richardson et al. (2012) found a near-zero correlation between neuroticism and GPA ( $r = -.01, p < .01$ ) this study demonstrated a small significant relationship ( $r = -.12, p < .05$ ). Although analysis confirmed the hypothesis that neuroticism would have a negative relationship with GPA, the effect size was the smallest in this study. Since data were available for depression, a facet of neuroticism, a post-hoc analysis was performed to examine if this subscale was a better predictor than the scale as whole. When a one-tailed Pearson product-moment correlation was performed on the depression facet of neuroticism, a significant relationship was demonstrated ( $r = -.12, p < .05$ ). While it could be argued the effect

sizes are small, the cumulative effects of small differences in personality factors may compound over time.

### **Limitations and Future Research**

While best efforts to investigate the topic were made, some limitations remain. The data set was archival; therefore, we could not control the way the data were collected. The present study relied on self-reported GPAs measured in ranges. Future research could measure GPA as a continuous variable. The data set does not contain data on all facets of conscientiousness. Future studies may collect more data at the facet level for analysis of potential relationships.

### **Conclusion**

One application for this research is providing preliminary data for the creation of a noncognitive college success model specific to the demographics of a university in the southeastern United States. A noncognitive college success model is an attractive supplement to traditional predictors because noncognitive assessments have generally shown little to no difference among majority and minority groups (Schmitt et al., 2009); consequently, this type of model could reduce adverse impact.

In addition, this research may provide data to support further investigation of using noncognitive factors to predict success at a university.

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## APPENDIX



1/3/2014

Investigator(s): Michael Glenn, Dr. Richard G. Moffett, III

Department: Psychology

Investigator(s) Email Address: mg3x@mtmail.mtsu.edu, Rick.Moffett@mtsu.edu

Protocol Title: Non-cognitive predictors of academic performance

Protocol Number: #14-169

Dear Investigator(s),

Your study has been designated to be exempt. The exemption is pursuant to 45 CFR 46.101(b) (4) Collection or Study of Existing Data. We will contact you annually on the status of your project. If it is completed, we will close it out of our system. You do not need to complete a progress report and you will not need to complete a final report. It is important to note that your study is approved for the life of the project and does not have an expiration date. The following changes must be reported to the Office of Compliance before they are initiated:

- Adding new subject population
- Adding a new investigator
- Adding new procedures (e.g., new survey; new questions to your survey)
- A change in funding source
- Any change that makes the study no longer eligible for exemption.

The following changes do not need to be reported to the Office of Compliance:

- Editorial or administrative revisions to the consent or other study documents
- Increasing or decreasing the number of subjects from your proposed population

If you encounter any serious unanticipated problems to participants, or if you have any questions as you conduct your research, please do not hesitate to contact us.

Sincerely,

Kellie Hilker

Compliance Officer

615-494-8918