# AN EMPIRICAL COMPARISON BETWEEN THE NEO-FFI AND THE WPI

# AND THE RELATIONSHIP BETWEEN SELF-EFFICACY AND WORKPLACE

# PERSONALITY

A Dissertation

by

LAUREN MICHEL OROZCO

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

December 2010

Major Subject: Counseling Psychology

An Empirical Comparison between the NEO-FFI and the WPI and the Relationship

between Self-Efficacy and Workplace Personality

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# ABSTRACT

An Empirical Comparison between the NEO-FFI and the WPI and the Relationship

between Self-Efficacy and Workplace Personality.

(December 2010)

Lauren Michel Orozco, B.A.; M.S., Texas A&M University

Chair of Advisory Committee: Dr. Daniel Brossart

While much research has been devoted to the study of personality, the separate construct of "workplace personality" is beginning to gain empirical attention. The current study takes a closer look at the factor structure of the Workplace Personality Inventory, a measure used to describe workplace personality using sixteen different scales measuring traits associated with positive job performance. This study also uses correlation analyses to determine the relation between workplace personality, personality traits, and self-efficacy. Social Cognitive Career Theory (SCCT) emphasizes the unique and important contribution of self-efficacy to career development and exploration. The present study determines the relationship between personality as measured by the NEO-FFI and workplace personality as it is measured by the WPI. The present study also uses self-efficacy scores and indicators of the Big Five personality factors (as measured by the NEO-FFI) to predict workplace personality. Results show that despite some logical correlations between scales on the NEO-FFI and the WPI, the measures are not redundant, showing the WPI to assess aspects of personality that the NEO-FFI does not.

Further, in support of SCCT, self-efficacy was shown to significantly correlate with workplace personality. Practical implications and limitations of the study are also discussed.

**DEDICATION**

I dedicate this project first and foremost to my mom and dad, who have loved and supported me both in my education and throughout my life.  Mom, each encouraging phone call and care package helped me day by day and your unwavering belief in me was invaluable.  Dad, whether it was encouragement, sharing your own experiences, or giving me space, your support was always felt and appreciated beyond words, especially during the internship process.

For my husband and best friend, Bear, who moved with me across the country and back again so that I could finish graduate school.  I am sure I was not the most fun person to live with at times but you always made me feel like I was.  Thank you for being next to me every day and loving me through it.

Thank you for all of your love and support through all of the stress, setbacks, and triumphs during the past five years and always.

# ACKNOWLEDGMENTS

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**CHAPTER I**

**INTRODUCTION**

From choosing a mate to choosing a career, personality creates individuality and has a significant influence on peoples' lives.  The assessment of personality and individual differences is therefore important to many areas of psychology and life in general.  It is important to have dependable inventories in order to assess personality and to understand people and their needs.  The NEO-FFI has been a well-researched measure of personality since its development in 1985 and is one of the most widely used personality inventories based on the Five Factor Model of personality.  The Workplace Personality Inventory (WPI) is a new, reliable measure that assesses sixteen work styles thought to be important to job success.  It is vital for new measures of personality, such as the WPI, to be compared to existing measures, like the NEO, in order to evaluate its validity and uniqueness.

One's personality includes not only descriptive traits and characteristics but also preferences based on those traits.  Personality, then, plays a big role in career choice and development.  For example, someone with an outgoing and social personality might enjoy a career with a lot of interaction and teamwork.  As Farh, Leong, and Law report

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This dissertation follows the style of the *Journal of Applied Psychology.*

(1998), persons with a high level of congruence between their vocational personality type and their work environment experience a higher level of job satisfaction and longer tenure at their jobs.  This hypothesis provided the basis for Holland's model of occupational personality, which proposes six different interest types (and thus corresponding work environments).  It could be argued then that "workplace personality" is a dimension of personality and therefore, needs to be explained through separate measures such as the WPI.  Betz and Borgen (2000) discuss the incorporation of Personal Style Scales in the revised Strong Interest Inventory (SII) due to the linkage between personality and interests. The four Personal Style Scales now included in the SII include Work Style, Learning Environment, Leadership Style, and Risk-Taking/Adventure.  Work Style distinguishes between those who prefer to work with people and those who prefer to work with data.  Learning Environment distinguished between people who prefer an academic environment from those who prefer working in a practical (hands-on) environment.  Leadership Style separates those who prefer to take a leadership role from those who do not.  Finally, the Risk-Taking/Adventure scale distinguished those who like to take risks from those that prefer to play it safe.

In addition to personality, a second important factor related to career development is self-efficacy, or one's confidence at performing specific tasks.  It is important to distinguish between personality and self-efficacy.  For example, someone may have a personality style which reflects a preference for technological or scientific work yet has low self-efficacy when it comes to working a computer.  This would lead to important recommendations like possibly more on-the-job training, further assessment,

or even choosing a career that provides a closer match between personality and self-efficacy. Perhaps the best way to choose a career is to use both personality and self-efficacy to predict how one would function in a work environment, or to predict his or her workplace personality. Social Cognitive Career Theory (which will be discussed further) speaks to the importance of self-efficacy in performing job-related tasks.

The present study will attempt to replicate the factor structure of the WPI. Because it is important for new measures to be compared to existing measures, this study will also provide an empirical comparison between the WPI and the NEO-FFM in order to determine how the measures align and how they are different. The present study attempts to establish convergent and discriminate validity of the WPI by comparing it to the NEO-FFI, an established measure of personality. This comparison will highlight different aspects of personality that are not assessed by measures of general personality, which may have implications for the use of personality measures in a vocational setting. Finally, this study will use respondent profiles on the NEO-FFM and the General Self-Efficacy Scale GSES (measuring self-efficacy) and attempt to predict domains of workplace personality on the WPI. While the majority of studies within Social Cognitive Career Theory have shown that self-efficacy on specific tasks improves performance of those tasks (Lent, Brown, & Hackett, 1994, 1996), the role of a general sense of self-efficacy in the workplace is less known. This study will add to the literature in Social Cognitive Career Theory by further examining the relationship between general self-efficacy and traits that have been proven to be important for vocational success (or workplace personality). Examining whether or not specific

personality traits and/or self-efficacy predict work styles that are proven to contribute to job success is meaningful for employers looking to hire job candidates with specific skills or traits.

Research questions are as follows:

1. Can we replicate the factor structure of the WPI?

2. How do the scales on the WPI compare to the Five Factors?

3. What is the pattern of correlation between workplace personality and self-efficacy?

4. Can we predict workplace personality using the NEO personality profile and self-efficacy scores?

**CHAPTER II**

**LITERATURE REVIEW**

**Models of Personality**

      **Five-Factor Model.**  Personality and individual differences have been a popular area of study within the field of psychology for decades.   Many have attempted to describe personality by narrowing down the many descriptive personality traits to a few general factors.  The most well-known models of personality will be discussed presently.  One of these models, the Five Factor Model articulated by Costa and McCrae (1985), maps personality traits onto five general factors.  These factors are Openness to experience, Conscientiousness, Extraversion, Agreeableness, and Neuroticism.  Costa and McCrae (1985, 1992) outline each of these five factors in detail.  Openness to experience is characterized by attributes such as independence of judgment, active imagination, and, preference for variety.  Someone with high conscientiousness is someone who possesses a high sense of purposefulness and responsibility and is often very trustworthy.  People scoring high on extraversion tend to be sociable and assertive.  The Agreeableness scale will be high for people who are trusting, accepting, and easily moved.  And finally, Neuroticism is described as being the opposite of emotional stability.  People high on this scale tend to experience low self-esteem, pessimism, and guilt more intensely than others.

      A conceptually similar model of personality to the Five Factor Model is the Big Five.  While Costa and McCrae were the originators of the Five Factor Model, Goldberg proposed a thoughtful conceptualization of the Big Five personality factors in the early

1980s. The Big Five is based on a lexical hypothesis that individual differences that are socially more relevant will come to be encoded in the natural language. The Big Five's original five factors include Surgency, Agreeableness, Conscientiousness, Emotional Stability, and Intellect .

While there has been some argument, personality is thought to remain relatively stable throughout the lifespan. For example, Costa and McCrae (1997) showed the Big Five to be highly stable throughout life, particularly beyond the age of thirty. There also seem to be consistent sex differences across the five factors. Women tend to score higher on neuroticism and agreeableness than men (Chapman, Duberstein, Sorensen, & Lyness, 2007). The authors attribute this difference to evolutionary theory and social role theory in that women tend to be more nurturing and have learned that by doing so keeps their offspring safe.

**The Big Seven.** In 1987, Tellegen and Waller used a similar method to identify seven personality factors known as the Big Seven (Simms, 2007). Five of these factors were similar to the Big Five personality factors but the Big Seven added the factors of Positive Valence (PV) and Negative Valence (NV) reflecting positive and negative self evaluations. Critics of the added factors argue that PV and NV are merely extreme variants of the existing Big Five (McCrae & Costa, 1995). In support of the additional factors of the Big Seven, Simms (2007) found that PV and NV tap significantly different areas and help aid in the diagnosis of pathology. For example, PV added significantly to the prediction of Narcissistic Personality Disorder and NV added significantly in the prediction of Borderline Personality Disorder compared to the Big Five alone. These

results are consistent with others such as Durrett and Trull (2005), who also found NV and PV accounted for unique variance when predicting personality disorders.

**Cattell's Model of Personality.** Raymond Cattell also used factor analysis to refine over 4,000 adjectives into what he called the most meaningful sixteen factors (Craig, 2005). These sixteen primary factors, sometimes referred to as source traits, underlie surface traits, which represent all possible types of personalities. Cattell's sixteen factors include warmth, reasoning, emotional stability, dominance, liveliness, rule-consciousness, social boldness, sensitivity, vigilance, abstractedness, privateness, apprehension, openness to change, self-reliance, perfectionism, and tension. These sixteen factors are measured on Cattell's personality measure, the 16 Personality Factors (16PF).

**Millon's Model of Personality.** One criticism of Cattell is that while he focused on developing a taxonomy of personality traits, he did not describe how these traits evolve into personality disorders (Strack & Lorr, 1997). In 1990, Millon developed a model of personality that attempts to explain both normal and disordered personality types. Based on evolutionary theory, he argues that there are four polarities central to evolutionary theory: existence, adaption, replication, and abstraction. Millon has incorporated the first three of these polarities into his theory of personality and proposed three axes as a reflection of each. These axes are pleasure-pain, active-passive, and self-other. Each personality type, normal or disordered is a combination of variations along the continuum of each axis (Craig, 2005). Millon developed the Millon Clinical Multiaxial Inventory (MCMI) in the 1970s to assess personality. The MCMI-II was

published in 1987 and most recently (in 2009) the MCMI-III was completed with the addition of the Grossman Facet Scales (Millon, Davis, Millon, & Grossman, 2009).

**Kernberg's Model of Personality.** While many models of personality (including the ones explained previously) are considered trait models, Kernberg posits a similar yet different view of personality with his concept of Personality Organization (PO). While the Five Factor Model (among others) is thought to describe conscious aspects of personality, Kernberg's PO is a mostly unconscious structure that incorporates innate characteristics such as temperament, early experiences, and motivational structures (Laverdiere, Gamache, Diguer, Hebert, Larochelle, & Descoteaux, 2007). This model includes three levels of PO: psychotic (PPO), borderline (BPO), and neurotic (NPO), which are defined by a few major underlying dimensions (identity, defense mechanisms, reality testing, and object relations). The model accounts for both normal and pathological personalities. For example, individuals with PPO present a loss of reality testing, severe identity diffusion, and use of primitive defenses. When examining the relationship between the FFM and Kernberg's model, Laverdiere et al. (2007) found that PO and personality factors are "two distinct, although interconnected constructs" (p. 826). Although the precise nature of the relationship between PO and personality factors (of the Five Factor model) is unknown, the authors speculate that the five factors may act like mediating variables  between PO and mental health.

**Vocational Psychology and Work Styles**

Holland's theory of vocational interest (Holland, 1959, 1997) is one of the most popular and widely studied models within the vocational psychology literature. Holland

proposed that there are six vocational personality types and that there is a natural match between these personality types and corresponding work environments with the same label.  The six occupational personality types are Realistic, Investigative, Artistic, Social, Enterprising, and Conventional (RIASEC).  Holland proposed that someone with a predominantly realistic occupational personality, for example, would be well-suited for an occupation with realistic and practical environment such as a police officer or a farmer.  Holland also proposes that these six personality types are arranged in order in a circular manner.  The circular order hypothesis and the circumplex hypothesis have both been used to explain this design (Fahr, Leong, & Law, 1998).  The circular order hypothesis predicts that the correlations between the adjacent types will be larger than all other correlations and that correlations between alternate types will be larger than correlations between opposite types.  The circumplex hypothesis only adds that the correlations between adjacent types, alternate types, and opposite types, will be equal. Gupta, Tracey, and Gore (2008) found the circumplex model to fit Holland's model well across all racial/ethnic groups when performing nonparametric analyses, but was less of a good fit when performing SEM based analysis.  They suggest, however, that eight to ten factors (as opposed to six) might provide a better fit.

Research in vocational psychology, and specifically Holland's model, has helped with the development of tools available for job selection.  The Occupational Information Network (O*NET) is an electronic database of skill requirements and characteristics of close to 1000 occupations and was designed to replace the Dictionary of Occupational Titles (Crouter, Lanza, Pirretti, Goodman, & Neebe, 2006).  Holland's model provided a

theoretical framework for the Interest Profiler on the O*NET website.   The Interest

Profiler is a self-assessment tool that can help people discover the type of work activities

and thus, occupations that they would like by measuring the six interest areas of

Holland's typology.  Eggerth, Bowles, Tunick, and Andrew (2005) compared the

Holland code classifications from the O*NET to the Holland code classifications from

the Strong Interest Inventory and the Dictionary of Holland Occupational Types since

each uses a different method to assign the codes.  All comparisons with the O*NET were

intermediate in value with correlations around .70.  The mean pairwise rate of agreement

between the O*NET, SII, and the DHOC was 70.60% for the first Holland Code letter.

However, when comparisons were made across all three sources, the rate of agreement

was only 15.71%.  The O*NET serves as the framework for the development of the

WPI.

There has been considerable research connecting Holland's model to the Five

Factor Model of personality.  For example, extroversion tends to be positively associated

with enterprising interests and social interests, openness is associated with artistic and

investigative interests, agreeableness is positively correlated with social interests, and

conscientiousness is correlated with conventional interests.  Neuroticism has not been

meaningfully correlated with any of Holland's types (Barrick, Mount, & Gupta, 2003).

Neuroticism has, however, been found to be positively associated with greater career

indecision and poorer job performance (Tokar, Fischer, & Subich, 1998).  Related to

career issues, higher neuroticism has been associated with lower personality-job

congruence, greater career indecision, more negative perceptions of occupational stressors, and poorer job performance ratings (Tokar et al., 1998)

Sanz, Gil, Garcia-Vera, and Barrasa (2008) examined the relationship between psychological needs and behavior patterns at work by comparing the NEO-FFI and the Personality and Preference Inventory-Normative (PAPI-N). The PAPI-N is designed to measure the most relevant needs in the work world as well as an individual's behaviors in work-related situations. The authors found a linkage between the two measures in that the measures were highly positively correlated . For example, the factor, Extraversion was significantly correlated with the scales of Leadership and Relating Closely on the PAPI-N. The study demonstrated that the behavior patterns and needs assessed by the PAPI-N "…can be coherently organized and interpreted within the framework…" of the Five Factors (p. 55). Clearly, personality is related to vocational needs and behavior.

The construct of workplace personality has not been clearly or consistently defined in the literature. The Workplace Personality Inventory (WPI), which is used in the present study, utilizes the Work Styles used in the development of the O*NET. Borman, Kubisiak, and Schneider (1999) explain that while the term "work personality" could be used in place of "work style," they wanted to avoid using a clinically oriented construct. The work styles taxonomy includes seven first-level constructs and seventeen second-level constructs and is based on past research both in personality and job performance. They describe work styles as traits that prove to be good predictors of job performance. The WPI (used in the present study) is based on these work styles.

**Self-Efficacy**

Self-efficacy refers to one's self-belief in successfully completing a specific task (Rottinghaus, Betz, & Borgen, 2003). In 1981, Hackett and Betz applied Bandura's construct of self-efficacy to the counseling literature, showing that both interest and self-efficacy are vital to career choice. For example, a career in mathematics requires both an interest in mathematics and confidence in one's ability to perform the tasks required for a job in the field. Further, Chartrand, Borgan, Betz, and Donnay (2002) demonstrated that there is a moderate to strong relationship between interests and self-efficacy, shown by correlations on the Strong Interest Inventory and the Skills Confidence Inventory. The authors also emphasize that interventions aimed at increasing self-efficacy tend to be useful and successful. This means that if interest is high and self-efficacy is low, it is still possible to be successful in the given task with the incorporation of an intervention to increase self-efficacy.

According to Betz and Borgen (2000), self-efficacy is important in narrowing down career options, and low self-efficacy is thought to limit initial interest development by causing one to avoid experiences that would facilitate the development of new interests. Betz, Harmon, and Borgen (1996) looked for sex differences in confidence levels for Holland's six occupational themes. They found that women had higher self-efficacy in Realistic and Social themed occupations, while men reported higher self-efficacy within Enterprising, Investigative, and Conventional themed occupations. There was an absence of sex difference within occupational groups meaning, for example, that a male and female architect reported almost identical confidence profiles.

Betz, Borgen, Rottinghaus, Paulsen, Halper, and Harmon (2003) correlated the Holland

themes with the scales from the Expanded Skills Confidence Inventory (ESCI), which

measures self-efficacy. Many of the SCI scales loaded heavily on one of Holland's

themes, and sometimes secondary loadings occurred. For example, Using Technology

correlated highly with Conscientiousness and Organizational Management correlated

highly with both Extraversion and Conscientiousness.

Larson and Borgen (2006) nicely outline the important relationship between

personality and self-efficacy. They presume that "…personality is a driver of the

acquisition of self-efficacy – that is, that most personality development precedes the

development of vocational self-efficacy (p. 298)." As mentioned previously, much of

the current research has focused on self-efficacy and interests but little has been done in

relation to self-efficacy and personality. Hartman and Betz (2007) did find that within

the Five Factors, conscientiousness and extraversion were the two factors that were

positively associated with many areas of occupational self-efficacy, while neuroticism

had a negative association with these scales. Agreeableness had no significant

relationship with self-efficacy.

Holland has asserted that interest inventories are measures of personality (1997).

However, Mount, Barrick, Scullen, and Rounds (2006) differentiate between the two.

As reported by Chartrand, Borgan, Betz, and Donnay (2002), they view interests as

preferences that influence choices in environment, activity, and satisfaction associated

with those choices. They see personality as

…traits pertaining to self-regulatory and motivational processes that influence

outcomes associated with performance on the chosen tasks – that is, interests

drive people toward types of environment whereas personality traits determine

how they interact in those chosen environments. (p. 298)

It is therefore important to examine the interaction of personality and self-efficacy and

not to assume that just because interests correlate with self-efficacy, personality does as

well. Larson and Borgen (2006) found that personality matters tremendously in career

self-efficacy by showing that the personality factor of openness, for example, not only

contributes to an interest in artistic pursuits but drive's confidence in that area as well.

**Social Cognitive Career Theory.** The importance of self-efficacy to career

interests, choices, and performance is outlined by Lent, Brown, and Hackett (1996) in

their development of the Social Cognitive Career Theory (SCCT). Adapted from

Bandura's Social Cognitive Theory, Social Cognitive Career Theory emphasizes the

importance of self-efficacy when it comes to career choice, development, and

performance. According to the authors' empirically supported model, self-efficacy

serves as a mediator between career choice and development. While self-efficacy,

outcome expectations (belief about the outcomes of performing specific behaviors), and

goals, are all relevant constructs, it is those vocational areas in which people are most

efficacious that have the biggest influence on career development. Lent, Brown, and

Hackett further explain that both skill and a sense of self-efficacy is required for

competent career performance. Rogers, Creed, and Glendon (2008) expanded on their

work by testing the role of personality and SCCT variables in career planning and

exploration. Hierarchical regression analyses were performed in an attempt to predict career planning. Achievement in school was entered first and accounted for 2.4% of the variance. Personality factors (as measured by the NEO-FFI) accounted for 16.4% of the variance at the second step of the equation. The SCCT variables of self-efficacy and outcome expectations were entered third and accounted for a significant 14.9% of the variance. Self-efficacy, unlike outcome expectations, was shown to serve a mediating role for both career planning and exploration as it was significantly associated with the outcome variable and reduced the standardized beta weights for the personality factors of conscientiousness and openness. To summarize, Rogers et al. (2008) found that those with high self-efficacy in making career decisions were more likely to make career plans and engage in career exploration. Larson, Wei, Wu, Borgen, and Bailey (2007) further explain Social Cognitive Career Theory by stating

> Personality, along with contextual affordances, influences learning experiences, which in turn influence self-efficacy and outcome expectations. Self-efficacy and outcome expectations then impact the development of interests, which in turn influence choice goals and, subsequently, choice actions. (p. 395)

The authors emphasize that both personality traits and self-efficacy are unique and vital to career development. Like Rogers et al., they also found that self-efficacy contributed significantly in predicting students' choice goals and actions, beyond personality alone. As explained by Larson et al. (2007), choice goals refer to aspirations to pursue a specific career and choice actions refer to actions in which a choice has been implemented (Lent, Brown, & Hackett, 1994). It is clear that self-efficacy (at least when

it comes to career exploration) plays a large role in whether or not people chose to set goals and engage in career exploration. Due to the significance of self-efficacy to career development, the present study attempts to use self-efficacy as an additional predictor (along with general personality) of workplace personality.

**Core Self-Evaluation.** Much like Social Cognitive Career Theory places emphasis on self-efficacy, core self-evaluations are theorized to play an important role in job satisfaction and performance. Judge, Locke, and Durham (1997) coined the term "core evaluations" to describe "…fundamental, subconscious conclusions individuals reach about themselves, other people, and the world" (p. 18). They describe four core evaluations of the self: self-esteem (the value one places on oneself), generalized self-efficacy (an estimate of one's capabilities), neuroticism (negative affectivity), and locus of control (the degree to which individuals feel in control of events in their lives). Under this theory, how one appraises oneself has an effect on job satisfaction. Kacmar, Collins, Harris, and Judge (2009) argue that while the Five Factors account for a large amount of variance in describing personality, they do not account for differences in how individuals appraise and evaluate themselves, which, as previously mentioned, has been proven to be important in job performance (Pearson, 2007). In 1998, Judge et al. found that core self-evaluations have significant effects on job satisfaction, with self-esteem and generalized self-efficacy contributing the most. Judge and Bono (2001) point out that Conscientiousness is often thought of as the "primary dispositional predictor of job performance" (p. 85). They were able to show that core self-evaluations were correlated with job performance to the same moderate degree that Conscientiousness was from the

Five Factor Model. In a later study, Judge and Hurst (2008) found similar results in that those with negative core self-evaluations were slower to complete education which affected job status and satisfaction in a negative way when compared to those with positive core self-evaluations.

**Frame-of-Reference Effects**

It is often assumed in personality testing that individuals respond to items in a way that indicates how they feel and behave in a very general sense, across situations (Lievens, De Corte, & Schollaert, 2008). This assumption is reflected in the way that the items of a measure are worded in that items often do not specify a frame of reference. For example, an item that reads, "I am detail-oriented," lacks a frame-of-reference and respondents may contextualize their responses in very different ways. However, an item that reads, "I am detail-oriented *at work*" provides a specific and consistent frame-of-reference. Research has shown that contextualized items (items containing a frame-of-reference) lead to higher criterion-related validity (Hunthausen, Truxillo, Bauer, & Hammer, 2003; Schmit, Ryan, Stierwalt, & Powell, 1995). Lievens, De Corte, and Schollaert (2008) further showed that validity may vary considerably depending on the frame-of-reference used. In a sample of 337 students, they found reliability was highest when participants responded to a large number of items using the same frame-of-reference (as opposed to switching frequently). They further explain that, "…simply imposing a frame-of-reference is not enough. It is equally important to ensure that test-takers adopt a frame-of-reference that conceptually overlaps with the criterion" (pp. 277).

Smith, Hanges, and Dickson (2001) discuss the relation of frame-of-reference effects to personnel selection. They argue that since job applicants have something to gain or lose as a result of the way they respond to a test, they may alter their responses (and therefore their frame-of-reference) in order to fit their idea of how an ideal employee would answer. This brings into question the value of personality measures in non-volunteer samples, or situations in which respondents have something to gain or lose. Schmit and Ryan (1993) compared the results from a sample of both students and job applicants who took the NEO-FFI. They found that among the job-applicant sample (the non-volunteer sample), a sixth factor (in addition to the five factors) emerged. They called this factor the *ideal employee* factor that contained components of both the Agreeableness and Conscientiousness scales. However, Smith, Hanges, and Dickson (2001) were not able to replicate the finding of the sixth factor. Schmit et al. (1995) also looked at the frame-of-reference effect in job applicants. They found validity of the NEO-FFI to be highest when items were altered to include a frame-of-reference (such as adding "at work" to the end of an item). They further explained that validity was essentially zero when general context items were used. Overall, incorporating a frame-of-reference seems to increase the validity of personality measures, especially when it comes to non-volunteer populations such as in personnel selection.

**Conclusion**

The Five Factor Model of personality is one of many models that attempt to narrow down the list of personality traits into a small number of factors while still accounting for a wide range of individual differences. Workplace personality is a newer

concept in the literature that refers to personality in a vocational setting, or how one thinks and behaves at work. It will be important to examine how workplace personality is similar to and different from personality in the general sense in terms of how it is measured and what it accounts for that general personality measures do not. Social Cognitive Career Theory emphasizes the importance of self-efficacy in career choice, development, and performance but usually focuses on self-efficacy for specific work-related tasks as opposed to a general sense of self-efficacy as the present study will examine. It is important for both employers and potential employees to have an understanding of how personality and self-efficacy can be useful in predicting how someone will function and perform in the workplace and has implications for hiring and maintaining successful employees.

# CHAPTER III

# METHODOLOGY

## Participants

A convenience sample was obtained of 101 adults, ages 18 and older.  In order to acquire a group of working individuals in the sample, written requests were sent to small businesses, college classrooms, and community organizations to request participation. The group of 101 participants was comprised of 62.1% women ($n = 64$) and 32.6% men ($n = 31$).  Self-reported ethnicity was as follows: 78.6% ($n = 81$) Caucasian, 7.8% ($n = 8$) Hispanic/Latino/a, 3% ($n = 3$) Asian/Pacific Islander, 1% ($n = 1$) African American, and 1% ($n = 1$) Native American.  Ages of the participants were organized into the following ranges: 16-20 (2.9%, n = 3), 21-24 (19.4%, $n = 20$), 25-29 (11.7%, $n = 12$), 30-34 (7.8%, $n = 8$), 35-39 (1%, $n = 1$), 40-49 (17.5%, $n = 18$), 50-59 (9.7%, $n = 10$), 60-69 (12.6%, $n = 13$), and 70 and older (7.8%, $n = 8$).  Every participant in this study is a high school graduate with 16.5% ($n = 17$) finishing between one and four years of college, 4.9% ($n = 5$) obtaining an associate's degree, 40.8% ($n = 40$) having a bachelor's degree, and 22.3% ($n = 23$) obtaining a graduate degree (master's or doctorate).  It should be noted that some participants chose not to respond to demographic questions.  It should be noted that 26 additional respondents completed the NEO-FFI and the GSES but failed to complete the WPI.  And so, these participants were dropped from the study due to incomplete data.

**Measures**

**NEO-FFI.** The NEO Five Factor Inventory (NEO-FFI) is the short form of the revised NEO personality inventory (NEO-PI), introduced by Costa and McCrae in 1992. It contains 60 of the strongest items from the NEO-PI, which measure five personality factors using a 5-point Likert style rating scale. The instrument measures personality in terms of five factors: Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism. Costa and McCrae (1992) reported internal consistencies from .68 to .86 for each of the five factors and test-retest correlations ranged from .75 to .83. In the present study, coefficient alphas for the five factors ranged from .63 (Extraversion) to .87 (Openness).

**Workplace Personality Inventory (WPI).** The Workplace Personality Inventory (WPI) is a new measure used to measure sixteen work-related personality traits (within seven domains) shown to be important to job success in a variety of jobs. The seven higher-order domains include Achievement Orientation, Interpersonal Orientation, Adjustment, Conscientiousness, Practical Intelligence, Social Influence, and Independence. The Achievement Orientation domain is made up of Achievement, Initiative, and Persistence scales. Interpersonal Orientation contains the scales of Cooperation, Concern for Others, and Social Orientation. The third domain of Adjustment is also comprised of three scales: Self Control, Stress Tolerance, and Adaptability. The scales of Dependability, Attention to Detail, and Integrity/Rule Following make up the Conscientiousness domain. Practical Intelligence contains scales measuring Innovation and Analytical Thinking. The final two domains (Social Influence

and Independence) are each made up of a single scale: Leadership and Independence respectively.

This seven factor, sixteen scale, model was developed rationally (as opposed to empirically), meaning that it is based on what makes logical sense as opposed to being based on empirical, quantitative research. The work styles are based on the Work Styles personality taxonomy included in the Occupational Information Network (O*NET) online database and endorsed by the United Stated Department of Labor. In order to protect against the presentation of an overly favorable image, the WPI includes a scale called "Unlikely Virtues." In sum, the instrument contains 216 items and takes approximately thirty minutes to administer.

Different taxonomies within personnel selection were reviewed prior to coming up with the taxonomy used in both O*NET and the WPI. These taxonomies include the Five Factor Model, the Hogan Personality Inventory, the Occupational Personality Questionnaire, and the Assessment of Background and Life Experiences. After examining literature reviews and meta-analyses, the work styles that proved to correlate highest with important job behaviors or work-related criteria were included. The initial item bank included 420 items taken from 12 different assessments and produced ninety-nine of the final items used. A second bank was used which contained 169 items measuring mental processes directed toward action. Fourteen items from this pool were used. The third item bank consisted of 246 experimental items written by a team of personality researchers to address gaps in the previous item banks as well as writing the items for the Unlikely Virtues scale. One hundred thirty-three of these items were used.

Items were chosen based on subtlety (the more the better), having been previously tested, avoidance of colloquial expressions (to enhance cultural sensitivity), alignment to one of the work styles (and including items tapping a mix of high and low levels of each trait), and fitting an eighth grade reading level. A pilot study was done and final item selection was determined by using Item Response Theory, differential item functioning, and Classical Test Theory

Pearson (2007) reports reliability and validity studies in order to demonstrate the usefulness of their instrument. Early reliability studies show a median coefficient alpha of .76. Relating to validity, convergent validity yielded correlations of .5 or better with Occupational Personality Questionnaire (OPQ) and the Hogan Personality Inventory (HPI), with many above .70. Criterion-related validity studies performed by Pearson showed that the WPI scales are related to on-the-job performance of employees in various occupations with a correlation of .21 and higher. Finally, the scales were also shown to be independent and adequately differentiate different work styles for each job.

**General Self-Efficacy Scale (GSES).** The General Self-Efficacy Scale is a ten-item scale intended to measure perceived self-efficacy. Originally developed in German by Matthias Jerusalem and Ralf Schwarzer in 1981, the scale has been adapted to 26 other languages and is intended for ages 12 and older. With regard to reliability, in samples from 23 nations, coefficient alphas ranged from .76 to .90 with the majority falling in the high .80s (Scholz, Gutierrez, Shonali, & Schwarzer, 2002). Criterion-related validity was found on numerous occasions where positive correlations were found with positive emotions, such as optimism, and negative correlations were found

with negative emotions, such as anxiety and stress (Luszczynska, Scholz, & Schwarzer, 2005).

**Procedures**

     As previously mentioned, participation was solicited through word of mouth followed by written requests to small businesses, one college classroom, and a community organization.  Associates and colleagues of the primary researcher suggested specific local businesses or organizations of which they were affiliated that may be willing to participate in the research study.  A small medical clinic and an investment firm were contacted along with a local athletic club.  The primary researcher contacted the organizations via email and arranged a meeting to describe the nature and purpose of the study and solicit volunteers.  Those interested in volunteering received the information sheet and verbally consented to participate.  While the sample was one of convenience and participants had an indirect relationship with the researcher, participation was voluntary and all respondents expressed verbal consent to participate. In all cases, respondents resided in large urban areas in both the Pacific Northwest and in the southern part of the United States.  After receiving the information sheet and consenting to participate, participants were given paper copies of each measure and instructed to answer all items.  To ensure anonymity, a five digit code consisting of a letter and four numbers (usually first initial and last four digits of the participant's Social Security Number) was used in place of a name.  In all cases, the primary researcher supervised the administration of the NEO and the GSES and requested the participant's email address along with his or her corresponding code so that results from online

measures could be paired with paper/pencil tests. The participant was then sent a link to the WPI to complete at his or her convenience. In cases of delayed responding, a reminder email was sent to participants reminding them to complete the online measure if they were still interested in participating in the study.

**CHAPTER IV**

**RESULTS**

Means and standard deviations for all measures are reported in Table 1. Because normally distributed data are an assumption of regression analyses, skewness statistics were examined and variables were determined to be normally distributed (SPSS skewness within +/- 1). Only three of the twenty-one total scales (Concern for Others and Innovation on the WPI and Neuroticism on the NEO-FF) showed skewness to be slightly above 1.0 and thus, no steps were taken to correct the skewness. Zero order correlations for the WPI are presented in Table 2. A Bonferroni correction was made in order to establish a more conservative level of significance. The correction adjusted the significant $p$-value to .05/16 = .003. Five between-scale correlations were above .50 and considered strong by Cohen (1988): Achievement and Initiative, Adaptability and Stress Tolerance, Concern for Others and Cooperation, Persistence and Dependability, and Attention to Detail and Dependability. Further, thirty-six additional correlations were between .30 and .50 (moderately correlated) indicating that the scales may not be measuring independent constructs. The same five between-scale correlations of .50 or higher (with the exception of Attention to Detail and Dependability which was only slightly lower at .47) were reported in the WPI manual (Pearson, 2007). Box plots were produced and very few univariate outliers were observed. There were six outliers on the NEO-FFI (four of them on the Neuroticism scale) and one outlier on the GSES. Six of the sixteen scales on the WPI yielded no outlying cases and those with univariate outliers had fewer than 5 (see Figure 1).

Question #1: Can the factor structure of the WPI be replicated?

The first question analyzed the factor structure of the WPI. A confirmatory factor analysis (CFA) was performed in an attempt to confirm the model reflected in the WPI. MacCallum, Widaman, Zhang, and Hong (1999) suggested that while higher sample sizes are preferred when conducting a CFA, sample size becomes less of a concern when factor loadings and thus, communalities are high. While the current sample size is considered low, scale reliabilities of the WPI have been found to be high, with sixteen out of the seventeen scales yielding alpha coefficients greater than .70 (Pearson, 2007). Thus, it was determined that the CFA could still be performed. Maximum likelihood estimations were used. The hypothesized seven-factor model is presented in Figure 2. The model produced a $X^2$ (85) = 273.3, p < .001, comparative fit index (CFI) = .688 and the root mean square error of approximation (RMSEA) = .154, indicating a poor model fit. There was one case containing missing data that was deleted in order to perform the bootstrap method. The bootstrap method was used to account for the variability in the sample, in which 200 bootstrapped samples (groups of randomly selected cases) of the data were run. The model fit did not improve with CFI = .693 and RMSEA = .148. A unitary model was also tested in which the covariance between all factors was set to "1" indicating that all scales would load on a large single factor. Model fit decreased with CFI = .557 and RMSEA = .162.

To take a closer look at the model, each factor was examined in isolation and scale reliabilities were obtained. Every scale loaded on its respective factor at .50 or above, with most factor loadings between .70 and .90. The one exception was the Social

Orientation scale within the Interpersonal Orientation domain.  This scale produced a

factor loading of only .15, affecting not only the Interpersonal Orientation factor but the

entire model fit.  The model was run again without the Social Orientation scale but the

model only improved slightly with CFI = .734 and RMSEA = .146.  Since two of the

factors (Social Influence and Independence) are only represented by one scale each, the

model was run without these two single-scale factors.  Model fit was not affected with

CFI = .735 and RMSEA = .150.  A final CFA was run that included only those factors

containing more than two scales and excluding the Interpersonal Orientation factor since

it contained the problematic scale of Social Orientation.  Once again, model fit could not

be obtained with CFI = .748 and RMSEA = .183.  Sample size proved to be too small to

obtain acceptable model fit.

To further examine the factor structure of the WPI, a principal factors analysis

was run using the scale scores and a factor matrix was obtained (see Table 3).  Using the

Kaiser-criterion (Kaiser, 1960), five factors obtained an eigenvalue greater than one and

accounted for a meaningful amount of variance (59.3%).  The scree test (Cattell, 1966),

however, seems to suggest four factors (six factors at most) as being meaningful, with a

break in the scree plot beginning with the addition of the seventh factor (see Figure 3).

This suggests that the factor structure of the WPI may be best represented by fewer than

the seven factors represented in the original factor structure.  However, sample size is

too small to make a definitive claim about the factor structure of the WPI.
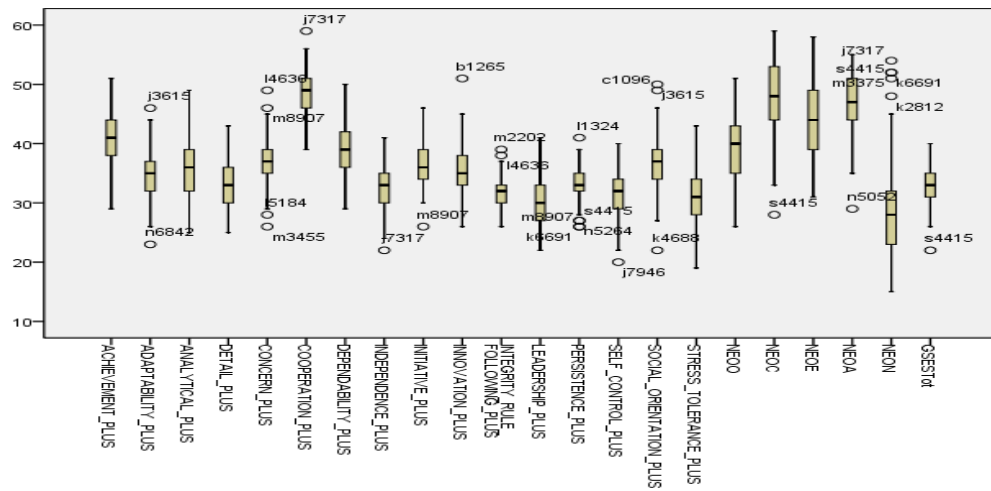
Figure 1. *Box plot representing outliers for scales of the NEO-FFI, GSES, and WPI*
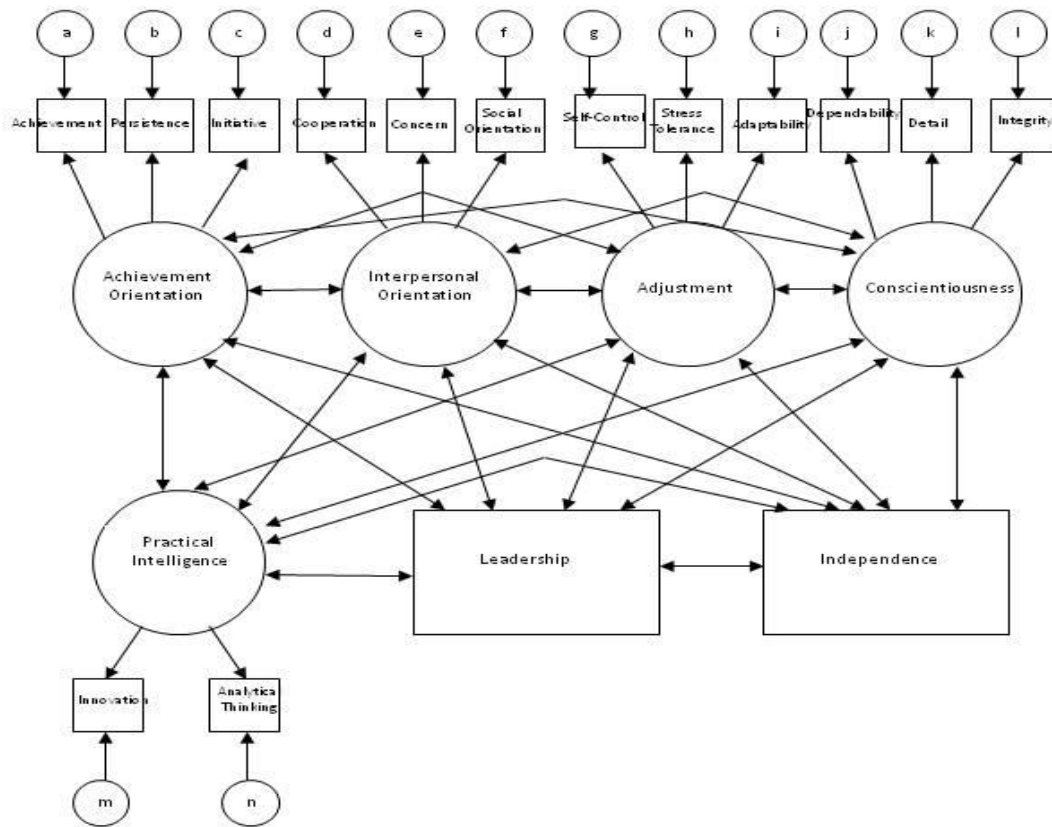


Figure 2. *Hypothesized seven-factor model for WPI*
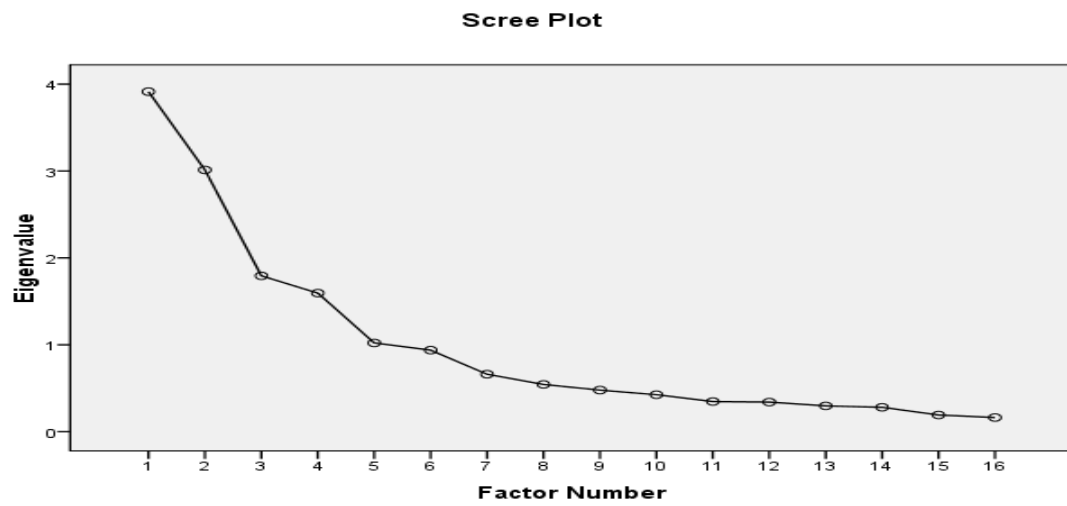
Figure 3. *Scree plot reflecting eigenvalues for 16 possible factors of the WPI*

Table 1

*Mean raw scores and Standards Deviations for the WPI, NEO-FFI, and GSES*

| Scale | Number of Items | Possible Range | Current Study | | Norms | |
|---|---|---|---|---|---|---|
| | | | Mean | SD | Mean | SD |
| **WPI** | | | | | | |
|    Achievement/Effort | 11 | 11.00-44.00 | 32.44 | 3.73 | 35.26 | 3.60 |
|    Persistence | 9 | 9.00-36.00 | 25.44 | 2.30 | 28.71 | 3.33 |
|    Initiative | 10 | 10.00-40.00 | 27.65 | 3.14 | 31.19 | 3.55 |
|    Leadership | 10 | 10.00-40.00 | 25.87 | 4.07 | 28.29 | 3.58 |
| Orientation | | | | | | |
|    Cooperation | 12 | 12.00-48.00 | 36.80 | 4.07 | 38.96 | 3.63 |
|    Concern for Others | 11 | 11.00-44.00 | 31.07 | 4.04 | 31.72 | 3.72 |
|    Social Orientation | 10 | 10.00-40.00 | 26.19 | 4.17 | 27.55 | 3.42 |
|    Self-Control | 9 | 9.00-36.00 | 23.53 | 3.77 | 26.83 | 3.55 |
|    Stress Tolerance | 10 | 10.00-40.00 | 25.26 | 3.99 | 28.95 | 3.85 |
| Adaptability/Flexibility | 10 | 10.00-40.00 | 26.30 | 3.92 | 30.06 | 3.44 |
|    Dependability | 9 | 9.00-36.00 | 26.52 | 4.25 | 29.55 | 3.08 |
|    Attention to Detail | 10 | 10.00-40.00 | 27.30 | 4.38 | 29.61 | 3.67 |
|    Integrity/Dutifulness | 9 | 9.00-36.00 | 23.16 | 3.15 | 26.81 | 3.62 |
|    Independence | 9 | 9.00-36.00 | 23.42 | 3.57 | 23.64 | 3.32 |
|    Innovation | 10 | 10.00-40.00 | 26.89 | 3.93 | 28.14 | 3.35 |
|    Analytical Thinking | 8 | 8.00-32.00 | 22.07 | 3.00 | 23.37 | 2.51 |
| **NEO-FFI** | | | | | | |
|    Openness | 12 | 00.00-48.00 | 27.27 | 5.39 | 27.03 | 5.84 |
|    Conscientiousness | 12 | 00.00-48.00 | 36.08 | 6.14 | 34.57 | 5.88 |
|    Extraversion | 12 | 00.00-48.00 | 31.99 | 6.40 | 27.69 | 5.85 |
|    Agreeableness | 12 | 00.00-48.00 | 35.09 | 5.06 | 32.84 | 4.97 |
|    Neuroticism | 12 | 00.00-48.00 | 16.24 | 8.31 | 19.07 | 7.68 |
| **GSES** | 10 | 10.00-40.00 | 33.07 | 3.40 | 29.48 | 5.13 |

N = 101

Table 2

*Zero Order Correlations for the 16 scales of the Workplace Personality Inventory*

| Subscale | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.Achievement/ Effort | - | .405* | .646* | .300* | .172 | .075 | .101 | .065 | .100 | .104 | .495* | .468* | .125 | .148 | .274 | .452* |
| 2. Persistence | | -- | .436* | .200 | .091 | -.024 | .049 | .485* | .404* | .332* | .501* | .435 | .258 | .189 | .024 | .264 |
| 3. Initiative | | | -- | .430* | .078 | -.072 | .216 | .085 | .342* | .398* | .199 | .174* | .005 | .304* | .421* | .482* |
| 4. Leadership Orientation | | | | -- | -.247 | -.265 | .396* | -.149 | .389* | .317* | -.082 | -.023 | -.050 | .382* | .490* | .270 |
| 5. Cooperation | | | | | -- | .635* | .110 | .226 | -.048 | .093 | .345* | .173 | .193 | -.071 | .045 | .212 |
| 6. Concern for Others | | | | | | -- | .129 | .156 | -.028 | -.007 | .192 | -.003 | .156 | -.284 | .000 | .116 |
| 7. Social Orientation | | | | | | | -- | -.004 | .324* | .357* | -.155 | -.075 | -.080 | .076 | .248 | .060 |
| 8. Self-Control | | | | | | | | -- | .452* | .333* | .240 | .075 | .342* | .084 | -.114 | .189 |
| 9. Stress Tolerance | | | | | | | | | -- | .608* | .034 | -.112 | .039 | .133 | .191 | .307* |
| 10. Adaptability/ Flexibility | | | | | | | | | | -- | -.039 | -.122 | -.085 | .343* | .344* | .364* |
| 11. Dependability | | | | | | | | | | | -- | .732* | .408* | -.188 | -.202 | .485* |
| 12. Attention to Detail | | | | | | | | | | | | -- | .349* | -.048 | -.190 | .468* |
| 13. Integrity/ Dutifulness | | | | | | | | | | | | | -- | -.131 | -.253 | -.047 |
| 14. Independence | | | | | | | | | | | | | | -- | .470* | .069 |
| 15. Innovation | | | | | | | | | | | | | | | -- | .219 |
| 16. Analytical Thinking | | | | | | | | | | | | | | | | -- |

*p < .003, N = 101.

Table 3

*WPI unrotated factor matrix*

| | Factor | | | | |
|---|---|---|---|---|---|
| WPI Scale | 1 | 2 | 3 | 4 | 5 |
| **Achievement** | | | | | |
| Achievement | .654 | .249 | -.435 | .248 | -.070 |
| Persistence | .651 | .300 | -.039 | -.344 | .086 |
| Initiative | .737 | -.108 | -.212 | .143 | -.055 |
| **Social Influence** | | | | | |
| Leadership | .520 | -.474 | -.212 | .017 | -.181 |
| **Interpersonal** | | | | | |
| Cooperation | .196 | .497 | .364 | .521 | .196 |
| Concern | .033 | .430 | .451 | .516 | -.047 |
| Social | .301 | -.248 | .201 | .176 | -.207 |
| **Adjustment** | | | | | |
| Self-Control | .376 | .317 | .486 | -.387 | .222 |
| Stress Tolerance | .616 | -.212 | .442 | -.327 | -.279 |
| Adaptability | .604 | -.288 | .376 | -.068 | -.018 |
| **Conscientiousness** | | | | | |
| Dependability | .346 | .720 | -.199 | -.057 | -.045 |
| Detail | .287 | .554 | -.406 | -.083 | .016 |
| Integrity | .128 | .479 | .020 | -.190 | .032 |
| **Independence** | | | | | |
| Independence | .392 | -.450 | -.127 | -.037 | .590 |
| **Practical IQ** | | | | | |
| Innovation | .429 | -.493 | -.043 | .380 | .146 |
| Analytical | .545 | .063 | -.003 | .153 | -.110 |

Question #2: How do the scales on the WPI relate to the Five Factors?

The second question addressed how the WPI would relate to the NEO-FFI five factors of personality. In order to address this question, two correlational analyses were performed. First, Pearson product moment correlations were conducted between each of the sixteen scales of the WPI and each of the five scales of the NEO-FFI.

The correlations between the NEO factors and the WPI scales are displayed in Table 4. The NEO-FFI factor of Openness had significant positive correlations with Innovation (.489), Initiative (.335), and Adaptability (.300). All three WPI scales are representative of different higher order domains, suggesting that Openness does not have a strong association with any of the domains. Conscientiousness on the NEO-FFI was significantly and positively associated with the Achievement Orientation domain (Achievement and Persistence) and the Conscientiousness domain (Dependability and Attention to Detail) on the WPI, but not with the third scale in each of the two domains.

Extraversion was significantly and positively correlated with Social Orientation (.720) on the WPI, Stress Tolerance (.430), Leadership (.399), Adaptability (.377), and Innovation (.350). Greater tendencies to be extraverted were meaningfully associated with a greater social orientation, as measured by the WPI.

Agreeableness was positively and significantly correlated with two scales on the Interpersonal Domain on the WPI: Concern for Others (.445) and Cooperation (.334). These correlations suggest a modest association between the Agreeableness factor and these two elements of interpersonal orientation in the workplace. Finally, Neuroticism displayed significant inverse correlations with three Adjustment scales on the WPI (Self Control, -.449, Stress Tolerance, -.592, and Adaptability, -.462). Neuroticism was also negatively correlated with Persistence (-.342), Leadership (-.325), and Social Orientation (-.349). This pattern clearly indicated that greater Neuroticism was inversely related to the Adjustment domain on the WPI and with lower tendencies to be persistent, display leadership, and to be socially-oriented in the workplace.

Table 4

*Pearson Product Moment Correlations between the WPI and the Five Factors*

|  | O | C | E | A | N |
|---|---|---|---|---|---|
| **Achievement** | | | | | |
| Achievement/Effort | .193 | .500* | .175 | .044 | -.071 |
| Persistence | -.053 | .511* | .034 | .064 | -.342* |
| Initiative | .335* | .209 | .292 | -.045 | -.119 |
| **Social Influence** | | | | | |
| Leadership | .236 | .113 | .399* | -.224 | -.325* |
| **Interpersonal** | | | | | |
| **Orientation** | | | | | |
| Cooperation | -.063 | .028 | .082 | .445* | ..011 |
| Concern for Others | -.025 | -.003 | .019 | .334* | .136 |
| Social Orientation | .117 | .016 | .724* | .149 | -.349* |
| **Adjustment** | | | | | |
| Self-Control | -.022 | .245 | -.046 | .249 | -.449* |
| Stress Tolerance | .140 | .112 | .432* | .084 | -.592* |
| Adaptability/Flexibility | .304* | .077 | .377* | .185 | -.462* |
| **Conscientiousness** | | | | | |
| Dependability | -.189 | .649* | -.026 | .067 | .009 |
| Attention to Detail | -.079 | .465* | -.059 | .074 | .061 |
| Integrity/Dutifulness | -.294 | .234 | -.163 | .164 | -.112 |
| **Independence** | | | | | |
| Independence | .284 | -.074 | -.058 | -.067 | -.227 |
| **Practical Intelligence** | | | | | |
| Innovation | .489* | -.106 | .351* | -.033 | -.168 |
| Analytical Thinking | .291 | .188 | .065 | .008 | -.169 |

*$p < .003$, N = 101

In order to further explore the relationship between the two measures, canonical correlation was performed between the NEO-FFI and the WPI. Canonical correlation maximizes the relationship between two sets of variables by identifying components on one set of variables that are related most highly to the components of the other set of variables (Chacko, 1986). A Bonferroni correction was again applied to control for Type I error, requiring a p value of less than .003 (.05/16) for significance. Since outlying cases can have undue impact on canonical correlation, the seven multivariate outliers were eliminated from the sample, thus reducing the sample from 101 to 95 (Tabachnick & Fidell, 2007). The tests of canonical dimensions (including canonical correlations) can be found in Table 5 and canonical coefficients can be found in Table 6.

Table 5

*Tests of Canonical Dimensions*

| Root | Eigen-value | % Variance | Canon. Corr. | Mult. F | df1 | df2 | p | Sq. Corr. |
|------|-------------|------------|--------------|---------|-----|--------|-------|-----------|
| 1 | 2.646 | 45.413 | .852 | 4.853 | 80 | 360.56 | .000* | .726 |
| 2 | 1.542 | 26.473 | .779 | 3.776 | 60 | 294.99 | .000* | .607 |
| 3 | .693 | 11.897 | .640 | 2.938 | 42 | 226.22 | .000* | .409 |
| 4 | .612 | 10.502 | .616 | 2.759 | 26 | 154.00 | .000* | .380 |
| 5 | .333 | 5.714 | .450 | 2.164 | 12 | 78.00 | .022 | .250 |

*p < .003

Five dimensions (or canonical variates) were obtained, with four being statistically significant. The first canonical correlation was .852 (73% overlapping variance), the second was .779 (61% overlapping variance), the third was .640 (41% overlapping variance), and the last was .616 (38% overlapping variance). A cutoff of .40 was used to determine which variables (or scales) composed each of the four dimensions. While Tabachnick and Fidell (2007) report that a .30 cutoff is commonly use, they go on to say that determining a cutoff score is "…a matter of taste…" (pp. 587) and depends on the data used. In the present study, a higher cutoff was used to more selectively represent the canonical variates.

The NEO-FFI scale that was correlated with the fist dimension was Extraversion; the WPI scales of Social Orientation and Stress Tolerance also contributed to the first canonical correlation. This canonical coefficient accounted for 45.6% of the variance between the measures, indicating that higher Extraversion was significantly associated with a higher social orientation and a higher stress tolerance in the workplace. The second dimension was composed of the NEO-FFI scales of Extraversion and Conscientiousness as well as the WPI scales of Cooperation (negative relationship) and Dependability. This pattern indicates that higher Extraversion and Conscientiousness are meaningfully associated with greater dependability and lower cooperation in the workplace. This coefficient accounted for 26% of the variance between the two measures.

Two additional canonical correlations merit reporting, as they accounted for 11% and 10% of the variance between the instruments, respectively. Three NEO-FFI scales

(Extraversion, Agreeableness, and Neuroticism) contributed to the third canonical coefficient, and two WPI scales were inversely associated with it, Self-Control and Analytical Thinking. Finally, Openness and Agreeableness were negatively associated with the fourth canonical coefficient. Initiative and Innovation on the WPI were associated with this canonical correlation, and Cooperation was inversely associated with it.

Question 3: What is the pattern of correlation between workplace personality and self-efficacy?

The third question addresses the pattern of correlation between workplace personality and self-efficacy. Correlations were conducted between self-efficacy and each scale of the WPI with correlation coefficients appearing in Table 7. As in the previous analyses, a Bonferroni correction was applied and p values below .003 (16/.05) were considered significant. Generalized self-efficacy was shown to correlate positively and significantly with the WPI scales of Persistence, Initiative, Stress Tolerance, Adaptability/Flexibility, and Analytical Thinking (*r*'s ranging from .310 to .475). This pattern indicates that a greater general self-efficacy is moderately yet significantly associated with greater persistence, initiative, stress tolerance, adaptability, and tendency to think analytically in the workplace.

Table 6

*Standardized Canonical Coefficients*

|  | Dimension | | | |
|---|---|---|---|---|
|  | 1 | 2 | 3 | 4 |
| **NEO-FFI** | | | | |
| Openness | -.159 | .108 | .291 | **.710** |
| Conscientiousness | .245 | **-.889** | .247 | -.110 |
| Extraversion | **-.769** | **-.405** | **-.595** | .106 |
| Agreeableness | -.039 | .376 | **-.470** | **-.491** |
| Neuroticism | .372 | -.306 | **-.894** | .393 |
| **WPI** | | | | |
| Achievement | .067 | -.275 | -.061 | -.253 |
| Persistence | .254 | -.113 | .234 | -.309 |
| Initiative | -.198 | .040 | -.213 | **.535** |
| Leadership | -.002 | -.185 | .155 | -.068 |
| Cooperation | -.202 | **.402** | -.352 | **-.599** |
| Concern | .255 | .016 | -.258 | .127 |
| Social | **-.605** | -.275 | -.249 | -.126 |
| Self-Control | -.161 | .020 | **.434** | -.138 |
| Stress Tolerance | **-.404** | .141 | .107 | -.222 |
| Adaptability | -.050 | .001 | -.030 | -.099 |
| Dependability | -.053 | **-.791** | .021 | -.030 |
| Detail | -.017 | -.065 | -.149 | .285 |
| Integrity | .203 | .179 | .169 | -.246 |
| Independence | .080 | .146 | .181 | .155 |
| Analytical | .147 | .123 | **.402** | .151 |
| Innovation | -.318 | .037 | .158 | **.421** |

*Note.* Values contributing to the canonical dimension are bolded

Table 7

*Correlations between the WPI and self-efficacy*

| WPI Scale | Self-Efficacy |
|---|---|
| **Achievement Orientation** | |
| Achievement/Effort | .294 |
| Persistence | .358* |
| Initiative | .317* |
| **Social Influence** | |
| Leadership Orientation | .266 |
| **Interpersonal Orientation** | |
| Cooperation | .052 |
| Concern for Others | .005 |
| Social Orientation | .208 |
| **Adjustment** | |
| Self-Control | .273 |
| Stress Tolerance | .404* |
| Adaptability/Flexibility | .475* |
| **Conscientiousness** | |
| Dependability | .158 |
| Attention to Detail | .099 |
| Integrity/Dutifulness | .053 |
| **Independence** | |
| Independence | .249 |
| **Practical Intelligence** | |
| Innovation | .229 |
| Analytical Thinking | .341* |

*p < .003. N = 101

Question 4: Can we predict workplace personality using the NEO personality profile and self-efficacy scores?

To address this, multiple regression analyses were conducted to evaluate how well the self-efficacy scale and the five scales on the NEO-FFI predict the domain scores within workplace personality. Scores for the seven WPI domains were determined through obtaining the averages of the scales within that domain. Zero order correlations for the NEO-FFI are presented in Table 8. Correlations among all NEO-FFI scales are below .40 (all but one are below .30) and thus are considered small or medium effects according to Cohen's guidelines (Cohen, 1988). In order to reduce multicollinearity, the data was centered by subtracting the mean from all observations, which created a new distribution of scores with a mean of 0 for each variable (Aiken & West, 1991). This step is important when multiple predictors are put into an equation. As Cohen, Cohen, West, and Aiken (2003) describe, "…if all the predictors in a regression equation containing interactions are centered, then each first-order coefficient has an interpretation that is meaningful in terms of the variables under investigation…" (p. 261). Seven separate regressions were completed, each with a different domain of workplace personality as the dependent variable and all with the NEO-FFI scales (Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism) and the self-efficacy scale (from the GSES) as the independent or predictor variables (Tables 9 through 15). The following equation was used with each of the seven domains acting as the outcome variable. For example, $Y$ (Achievement Orientation) = $X_1$ (Openness) + $X_2$ (Conscientiousness) + $X_3$ (Extraversion) + $X_4$ (Agreeableness) + $X_5$ (Neuroticism) + $X_6$

(SE) + e. Since the scales on the NEO-FFI were not highly correlated with each other, they were used concurrently as predictors. As in previous analyses, a bonferroni correction was applied to control for Type I error, requiring a p value of less than .007 (.05/7) for significance. Power was calculated and assessed to be high, meaning there is a high probability of not committing Type II error. Power was above .990 on every analysis except for the equation which set Independence as the dependent variable where power was .505.

Table 8

*Zero Order Correlations for the NEO-FFI*

| NEO-FFI Scale | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 1. Openness | -- | -.067 | .200* | -.028 | -.039 |
| 2.Conscientiousness | | -- | .085 | .176 | -.255* |
| 3.Extraversion | | | -- | .148 | -.374** |
| 4.Agreeableness | | | | -- | .242* |
| 5. Neuroticism | | | | | -- |

*p < .05 **p < .01. N = 101

In the first equation, Achievement Orientation was used as the outcome variable. Conscientiousness emerged as a significant predictor of the NEO scales and the entire equation accounted for 32% of the variance in Achievement Orientation (see Table 9). The model produced the following result, $R^2 = .36$, $F(6,95) = 8.90$ ($p < .01$).

Table 9

*Achievement Orientation predicted by the Five Factors and self-efficacy*

| Variable | B | SE B | β | t | *p* | Sq. Semi-Partial Correlation |
|---|---|---|---|---|---|---|
| | | | Achievement Orientation | | | |
| Openness | .087 | .045 | .169 | 1.944 | .055 | .026 |
| Conscientiousness | .208 | .041 | .459 | 5.096 | .000* | .176 |
| Extraversion | .052 | .039 | .120 | 1.316 | .191 | .012 |
| Agreeableness | -.039 | .047 | -.071 | -.831 | .408 | .005 |
| Neuroticism | .023 | .035 | .070 | .668 | .506 | .003 |
| Self-Efficacy | .176 | .086 | .217 | 2.060 | .042 | .029 |

Note: *p < .007

In the equation to predict Adjustment, Neuroticism emerged as the significant predictor. The equation accounted for 41% of the variance (see Table 10). The model produced the following result, $R^2 = .45$, $F(6,95) = 12.56$ ($p < .01$). Higher Neuroticism scores significantly predicted lower Adjustment on the WPI.

Table 10

*Adjustment predicted by the Five Factors and self-efficacy*

| Variable | B | SE B | β | Adjustment t | p | Sq. Semi-Partial Correlation |
|---|---|---|---|---|---|---|
| Openness | .064 | .049 | .107 | 1.317 | .191 | .010 |
| Conscientiousness | -.011 | .045 | -.020 | -.242 | .810 | .000 |
| Extraversion | .033 | .043 | .065 | .764 | .447 | .003 |
| Agreeableness | .047 | .52 | .073 | .904 | .368 | .005 |
| Neuroticism | -.192 | .039 | -.490 | -.4988 | .000* | .147 |
| Self-Efficacy | .170 | .094 | .179 | 1.820 | .072 | .020 |

Note: *p < .007

The equation to predict Independence revealed that neither the NEO scale nor the GSES accounted for significant variance in Independence (see Table 11).  The model produced the following result, $R^2 = .17$, $F(6,95) = 3.29$ ($p < .01$).

Table 11

*Independence predicted by the Five Factors and self-efficacy*

| Variable | | | Independence | | | |
|---|---|---|---|---|---|---|
| | B | SE B | β | t | P | Sq. Semi-Partial Correlation |
| Openness | .163 | .065 | .248 | 2.506 | .014 | .055 |
| Conscientiousness | -.086 | .059 | -.149 | -1.447 | .151 | .018 |
| Extraversion | -.050 | .057 | -.091 | -.875 | .384 | .007 |
| Agreeableness | -.063 | .069 | -.090 | -.917 | .361 | .007 |
| Neuroticism | -.094 | .051 | -.222 | -1.849 | .068 | .030 |
| Self-Efficacy | .170 | .124 | .164 | 1.370 | .174 | .016 |

Note: *p < .007

In the equation to predict Interpersonal Orientation, Extraversion and Agreeableness were significant contributors, accounting for 30% of the variance in Interpersonal Orientation (see Table 12). The model produced the following result, $R^2 =$ .34, $F(6,95) = 8.09$ ($p < .01$).

Table 12

*Interpersonal Orientation predicted by the Five Factors and self-efficacy*

| Variable | B | SE B | Interpersonal Orientation | | | Sq. Semi-Partial Correlation |
|---|---|---|---|---|---|---|
| | | | β | t | p | |
| Openness | -.042 | .048 | -.077 | -.866 | .384 | .005 |
| Conscientiousness | -.045 | .044 | -.094 | -1.026 | .308 | .007 |
| Extraversion | .195 | .042 | .427 | 4.623 | .000* | .150 |
| Agreeableness | .229 | .051 | .396 | 4.527 | .000* | .144 |
| Neuroticism | .063 | .038 | .178 | 1.660 | .100 | .019 |
| Self-Efficacy | .115 | .082 | .134 | 1.253 | .213 | .011 |

Note: *$p < .007$

Openness emerged as a significant predictor of Practical Intelligence, accounting for 29% of the variance (see Table 13). The model produced the following result, $R^2 = .34$, $F(6,95) = 7.94$ ($p < .01$).

Table 13

*Practical Intelligence predicted by the Five Factors and self-efficacy*

| Variable | Practical Intelligence | | | | | |
| | B | SE B | β | t | p | Sq. Semi-Partial Correlation |
| --- | --- | --- | --- | --- | --- | --- |
| Openness | .257 | .055 | .417 | 4.699 | .000* | .156 |
| Conscientiousness | -.005 | .050 | -.009 | -.101 | .920 | .000 |
| Extraversion | .054 | .048 | .104 | 1.119 | .266 | .009 |
| Agreeableness | -.034 | .058 | -.051 | -.581 | .563 | .002 |
| Neuroticism | -.015 | .043 | -.037 | -.347 | .729 | .001 |
| Self-Efficacy | .248 | .105 | .255 | 2.373 | .020 | .040 |

Note: *p < .007

Extraversion and Agreeableness were significant predictors of Social Influence, accounting for 29% of the variance (see Table 14). The model produced the following result, $R^2 = .34$, $F(6,95) = 7.92$ ($p < .01$).

Table 14

*Social Influence predicted by the Five Factors and self-efficacy*

| Variable | B | SE B | β | t | P | Sq. Semi-Partial Correlation |
|---|---|---|---|---|---|---|
| | | | | Social Influence | | |
| Openness | .120 | .069 | .155 | 1.742 | .085 | .021 |
| Conscientiousness | .058 | .063 | .085 | .921 | .360 | .006 |
| Extraversion | .204 | .061 | .312 | 3.361 | .001* | .080 |
| Agreeableness | -.284 | .073 | -.344 | -3.915 | .000* | .108 |
| Neuroticism | -.126 | .054 | -.251 | -2.333 | .022 | .038 |
| Self-Efficacy | .031 | .131 | .025 | .233 | .816 | .000 |

Note: R² = *p < .007

In the final equation, the WPI domain of Conscientiousness was used as the outcome variable. Conscientiousness from the NEO-FFI emerged as a significant predictor, accounting for 37% of the variance (see Table 15). The model produced the following result, $R^2 = .41$, $F(6,95) = 10.86$ ($p < .01$).

Table 15

*Conscientiousness predicted by the Five Factors and self-efficacy*

| Variable | B | SE B | β | t | p | Sq. Semi-Partial Correlation |
|---|---|---|---|---|---|---|
| | | | Conscientiousness | | | |
| Openness | -.089 | .046 | -.160 | -1.917 | .058 | .023 |
| Conscientiousness | .298 | .042 | .610 | 7.036 | .000* | .311 |
| Extraversion | -.032 | .041 | -.069 | -.788 | .433 | .004 |
| Agreeableness | .028 | .049 | .047 | .573 | .568 | .002 |
| Neuroticism | .049 | .037 | .137 | 1.350 | .180 | .011 |
| Self-Efficacy | .010 | .089 | .011 | .113 | .910 | .000 |

Note: *$p < .007$

**CHAPTER V**

**DISCUSSION AND CONCLUSION**

The present study had four primary goals. The first goal was to attempt to replicate the factor structure of the WPI. Different models were tested including the original seven-factor model, models containing three and four factors, and a single factor model. Model fit could not be obtained and thus the factor structure could not be replicated. Due to the high volume of parameters, a much larger sample size is required to obtain meaningful results. A principal factors analysis was run in an attempt to learn more about the factors within the WPI from an exploratory view. Keeping in mind the limited sample size, results suggested that five factors (using the Kaiser-criterion) or six factors (using the scree test) may provide a better fit than the seven factors used in the WPI. It is also worth noting that upon closer look of the data, the Interpersonal Orientation domain proved to be the most problematic domain within the model in terms of obtaining model fit in that the factor loading for one of the scales was very low.

In addition to sample size, there are other possible explanations for the inability to confirm the factor structure of the WPI. As Gignac (2009) mentions, several researchers have been unable to replicate the Five Factor Model of personality as used in the NEO-FFI. Both the Five Factor Model and the model used by the WPI are rationally derived; consequently, this may make it difficult to empirically confirm their factor structure. As previously mentioned, five of the between-scale correlations on the WPI are strongly correlated as interpreted by Cohen (1988) and an additional 36 are moderately correlated. This suggests that there is some overlap between the scales and

the scales may not be measuring unique and independent constructs, making it difficult to confirm the factor structure.

The second goal of the present study was to explore the relationship between the sixteen scales on the WPI and the five factors as measured on the NEO-FFI. Both zero order Pearson product moment correlations and canonical correlations were obtained to determine the relationship between the two measures.

With regard to the canonical analyses, four significant canonical dimensions were elicited from the data, which serve to maximize our understanding of the relationship between the NEO-FFI and the WPI. The first canonical dimension included the criterion variables of extraversion on the NEO-FFI and both social orientation and stress tolerance on the WPI, with extraversion and social orientation as the primary contributors. Product-moment correlations also show Extraversion on the NEO-FFI and Social Orientation on the WPI to be the two scales which are most highly correlated compared with other scale comparisons. Both scales are representative of preferences for working with others and for being outgoing. This relationship adds to the construct validity of this particular scale on the WPI as it correlates with a scale measuring a similar construct on the NEO-FFI. The first dimension was also composed of the WPI scale of Stress Tolerance. Perhaps those who are more inclined to work with others, also have a greater tolerance for stress in the workplace.

The Conscientiousness scale on the NEO-FFI and the Dependability scale on the WPI were the primary contributors to the second canonical dimension indicating a high correlation between these two scales. This was also obtained in the product-moment

correlation analysis, which showed Conscientiousness on the NEO-FFI to correlate most

with the domains of Achievement Orientation and Conscientiousness on the WPI.   As

previously mentioned, persons scoring high in Conscientiousness on the NEO-FFI are

thought to be responsible and trustworthy - descriptors that also describe persons scoring

high on Dependability on the WPI, again supporting the construct validity of the WPI.

While Extraversion on the NEO-FFI also contributed to this dimension, as did

Cooperation on the WPI (in the opposite direction), both scales were not as highly

correlated with the dimension as Conscientiousness and Dependability.  This does

suggest, however, that those who are dependable and conscientious also tend to be

extraverted.  The negative relationship with cooperation suggests that while they may be

dependable and have a preference to working with others, they may not be as skilled at

cooperation.  It could be argued that an employee who is detail oriented and responsible

may be more focused on completing the task at hand and on remaining in control than on

cooperating.

The most significant criterion contributing to the third canonical dimension was

Neuroticism.  Other contributors included a negative relationship with both Self-Control

and Analytical Thinking on the WPI.  This suggests that those higher on Neuroticism

have lower scores on both Self-Control and Analytical Thinking.  Since the Neuroticism

scale is a measure of emotional instability, it is no surprise that it would be inversely

related to Self-Control, which measures the ability to maintain composure in difficult

situations.  As one would expect, product-moment correlations showed Neuroticism on

the NEO-FFI to correlate negatively and significantly with all three scales of the

Adjustment domain on the WPI. Further, since Analytical Thinking on the WPI addresses one's ability to use logic and produce high quality work, it is easy to see how emotional instability would work against this skill. For example, if an employee becomes overwhelmed easily or is unable to maintain composure, it would be difficult for him or her to think logically and critically.

The final significant canonical variate was composed of positive relationships between Openness (NEO-FFI), Initiative (WPI), and Innovation (WPI). This relationship was also reflected in the product-moment correlations. As previously mentioned, according to Costa and McCrae (1985, 1992), persons high in Openness tend to have active imaginations and prefer variety. Similarly, persons high on the WPI scales of Initiative and Innovation are thought to be active in pursuing new (possibly different) possibilities. The value of newness seems to be reflected in all three of these scales. The Agreeableness factor on the NEO-FFI and Cooperation on the WPI contributed to the fourth dimension as having a negative relationship. It appears that persons or employees who are innovative and take initiative tend to be less cooperative and agreeable. It may be that they are more invested in furthering their own ideas than in cooperating with others.

Overall, the two measures seem to align in some important ways, which adds to the convergent validity of the WPI. They correlate highly when it comes to these four dimensions that could be summarized as measuring social qualities, reliability, pessimism or instable affect, and openness and initiative in pursuing new ideas. The NEO-FFI factor of Extraversion was shown to correlate most often with the WPI

compared with other factors on the NEO-FFI. The two measures seem to be most related when it comes to their ability to assess cooperation and relationships with others due to the fact that Extraversion on the NEO-FFI and Cooperation on the WPI appear most often in accounting for the variance in the canonical dimensions. The NEO-FFI does seem to do satisfactorily at capturing a person's ability to work well with others, which is also important for success in the workplace. An implication of this involves employers using the NEO-FFI during the hiring process.

These results also indicate that the NEO-FFI may not address some traits of workplace personality that have proven to be important to vocational success. For example, half (eight) of the WPI scales did not fall into any of the four significant canonical variates indicating that they were not needed to maximize the correlation between the two measures. Achievement, Persistence, Leadership, Concern for Others, Adaptability, Attention to Detail, Integrity/Rule Following, and Independence all had canonical coefficients below the cutoff score and were not included in any of the four dimensions. All five factors of the NEO-FFI were accounted for in at least one of the canonical dimensions. It could be argued that the WPI scales that did not appear in one of the dimensions measure those aspects of personality that are specific to workplace personality. Overall, there are some areas in which the NEO-FFI does correlate with the WPI but some in which it does not. This could be considered evidence that the WPI measures traits that are unique and important to vocational success that the NEO-FFI does not address, but this goes beyond the scope of the current study.

The NEO-FFI and the WPI correlate highly in many expected ways, supporting the convergent validity of the WPI. For example, as previously mentioned, Extraversion on the NEO-FFI and Social Orientation on the WPI obtained the highest significant correlation. Both scales measure very similar constructs, contributing to the convergent validity of the WPI. Also, both measures attempt to measure conscientiousness: the NEO-FFI through a single scale, and the WPI through a combination of three scales (Attention to Detail, Dependability, and Integrity/Dutifulness). The NEO-FFI scale was highly correlated with both Attention to Detail and Dependability on the WPI, again adding to its construct validity. Perhaps Integrity/Dutifulness measures a piece of conscientiousness that is too specific to the workplace to correlate highly with conscientiousness in a general way.

The current study also produced evidence of discriminate validity, as certain scales that measure theoretically unrelated constructs had very low correlations. For example, the three lowest correlations between the two measures were between Concern for Others (WPI) and Conscientiousness (NEO-FFI), Dependability (WPI) and Neuroticism (NEO-FFI), and Analytical Thinking (WPI) and Agreeableness (NEO-FFI). It would not be expected that a scale measuring a respondent's level of agreeableness to be meaningfully related to the degree to which he or she can engage in critical thinking or problem solving.

The third goal of this study was to determine possible relations between the domains of workplace personality and self-efficacy. As previously mentioned, other studies have examined how career self-efficacy correlates with general personality

(Hartman & Betz, 2007). The present study was exploratory in nature and examined correlations between general self-efficacy and workplace personality. A general sense of self-efficacy (as measured by the GSES) was significantly correlated with higher scores on Persistence, Initiative, Stress Tolerance, Adaptability/Flexibility, and Analytical Thinking on the WPI. It is worth noting that none of the scales on the WPI correlated negatively with self-efficacy, indicating that high scores in all areas of workplace personality were associated with higher scores on overall sense of self-efficacy. This means that generally, confident people score higher on workplace personality scales, which in turn predicts better job performance. It is expected that in order to both take initiative (as assessed through the Initiative scale on the WPI) and persist through obstacles and challenges (as assessed through the Persistence scale on the WPI), one must have the confidence to do so. Therefore, it is logical to think that these two scales are correlated with higher self-efficacy.

Results suggest that those with a higher ability to tolerate stress and adapt in the face of obstacles also have higher levels of self-efficacy. Finally, there was a significant relationship between self-efficacy and analytical thinking indicating that those who are able to use logic to address work-related issues also have high general self-efficacy. These correlations lend credence to the importance of self-efficacy to work performance as described by Social Cognitive Career Theory since these workplace personality traits have been proven to job success (Pearson, 2007). While SCCT emphasizes about the importance of career-related self-efficacy, it appears that a general sense of self-efficacy is also important in its relationship to workplace personality in that a higher sense of

general self-efficacy is related to higher scores on a number of workplace personality traits.

The final goal of the present study was to attempt to predict workplace personality based on scores on the NEO-FFI and the GSES. This was done be entering all five factors of the NEO-FFI and self-efficacy as measured by the GSES as predictors for each domain of workplace personality. In the workplace domain of Achievement Orientation, the only significant predictor was Conscientiousness on the NEO-FFI (compared to other personality factors and self-efficacy). This means that the employee characteristics of responsibility and attention to detail are good predictors of someone who takes initiative, is persistent, and strives towards his or her goals. Similarly, Conscientiousness on the NEO-FFI also proved to be a significant predictor of Consciousness on the WPI. These scales are highly correlated and seem to be measuring similar constructs, lending to the construct validity of the WPI in the way it is measuring conscientiousness.

A separate regression analysis showed that the domain of Adjustment was best predicted by Neuroticism on the NEO-FFI. Thus, persons with lower scores on Neuroticism predicted higher scores on Adjustment. Employees scoring high on the Adjustment domain show an ability to cope with and manage different situations and accept criticism well. Therefore if these are particularly important traits for a given job, results show that it would be useful to assess the neuroticism of potential job candidates as lower neuroticism has been shown to be a predictor for these traits. For example, in a dynamic work environment in which things are frequently changing and employees must

function independently and adapt to changes quickly, a low level of neuroticism is a good predictor of their ability to do so.

The NEO-FFI factors of Agreeableness and Extraversion were significant predictors for two of the WPI domains: Interpersonal Orientation and Social Influence (Leadership). Since the two measures are assessing similar constructs in desire and ability to work with others, this comes as no surprise and again speaks to the construct validity of the WPI.

Finally, Openness on the NEO-FFI was shown to be a significant predictor of the WPI domain, Practical Intelligence. As previously mentioned, those with high scores on the Openness factor are described as having an active imagination and a preference for variety. The domain of Practical Intelligence refers to an ability to generate new ideas and to think logically and critically. Both openness and practical intelligence seem to relate to creativity and critical thinking. This result demonstrates that persons who are imaginative and open to new experiences predict an ability to be creative and to think critically in the workplace.

Collectively, results from the correlational and regression analyses highlight how the two instruments are most related. Conscientiousness on the NEO-FFI is most related to Conscientiousness and Achievement scales on the WPI. Extraversion on the NEO-FFI is related to and predictive of Social Influence and Interpersonal Orientation scales on the WPI, and Neuroticism on the NEO-FFI effectively predicts the Adjustment domain on the WPI and is correlated significantly with all scales within the domain.

As previously mentioned, Independence on the WPI was not significantly correlated with any of the five factors. As expected then, it was also not significantly predicted by any of the five factors or self-efficacy. Interestingly, general self-efficacy was not a significant predictor of any of the seven domains of workplace personality. Social Cognitive Career Theory posits that self-efficacy plays a major role in career choice and goal-oriented behavior. While self-efficacy was positively and significantly correlated with five scales on the WPI, this study did not find general self-efficacy to be a significant predictor of trait domains proven to be important to workplace success. It seems that for general self-efficacy to be a useful predictor of vocational success, it is important for it to be measured on specific work-related tasks. While general-self-efficacy was positively correlated with a number of workplace personality scales, when looking at the seven domains, it did not have predictive power. There was no domain in which self-efficacy was correlated with all scales within that domain. For example, while general self-efficacy showed a significant positive relationship with Persistence and Initiative within the Achievement Orientation domain, it was not related to Achievement/Effort. Similarly, while self-efficacy was positively correlated with both Adaptability/Flexibility and Stress Tolerance within the Adjustment domain, it did not prove to be related to Self-Control. Therefore, while general self-efficacy is related to a number of workplace personality traits, it did not have predictive power for any of the domains.

While general self-efficacy was not a significant predictor of workplace personality domains, the present study provided further evidence for the usefulness of

self-efficacy in a vocational setting since self-efficacy did correlate positively and

significantly with a number of workplace personality traits. While past research has

shown that self-efficacy is a unique and important indicator of career exploration and

career choice actions, the current study shows that general self-efficacy is also correlated

with traits that have been proven to be important to job success despite the lack of

predictive power. This speaks to the value of assessing self-efficacy when interviewing

potential employees as well as the value of communicating a sense of self-efficacy when

interviewing for potential jobs.

The present study also provided more information about the WPI as a unique tool

for measuring aspects of workplace personality that are not measured by measures of

general personality such as the NEO-FFI. In some expected ways, such as between

interpersonal characteristics and conscientiousness, the scales were closely correlated

indicating that on the NEO-FFI, higher Extraversion and lower Neuroticism are good

predictors of many aspects of workplace personality that have proven to lead to success

in the workplace. However, the WPI seems to assess some areas of personality that the

NEO-FFI does not, suggesting that is a unique tool in vocational assessment.

**Limitations and Areas of Future Research**

There were some limitations to this study that are worth mentioning. One of the

primary limitations has to do with the small sample size. While the sample was

sufficient when it comes to accepted standards for correlational analyses, the sample size

proved insufficient for producing meaningful results on the CFA. Analyses should be

done replicating the factor structure of the WPI using a larger sample size. The current

sample was also highly educated when compared to the general population, and thus, have obtained a certain level of success.  It is also worth noting that they were also from major urban areas, so rural areas were not represented in the current sample.   Over 40% of the current sample reported obtaining a bachelor's degree as opposed to about twenty-four percent of the general population (U.S. Census Bureau, 2010).  Thus, the current sample may be more vocationally successful than the general population. While the present study provided correlations between general self-efficacy and workplace personality, future studies could correlate workplace personality with career-specific self-efficacy using measures such as the Skills Confidence Inventory, which measures self-efficacy for specific vocations tasks.  It would be valuable to determine if self-efficacy for specific tasks would be a significant predictor or workplace personality domains since general self-efficacy was not.

It is also worth noting that two different methods of administration were used in the present study: the NEO-FFI and the GSES were administered utilizing the conventional paper/pencil method, and participants responded to the WPI using computer administration.  In their study, Davis and Cowles (1989) administered a number of tests to different groups of participants utilizing both paper/pencil and computerized versions.  They found that while computerized administered tests showed higher test-retest reliability, they also found respondents more likely to "fake good" when compared to paper/pencil administration.   However, when it comes to item scores and scale intercorrelations, Merten and Siebert (1997) found no significant difference between the paper/pencil form and the computerized form of both the Eysenck

Personality Questionnaire – Revised and the Carroll Rating Scale for Depression. Thus, it is unknown to what degree the two types of administration affected the results of the current study. Further, while personality is thought to be a stable construct, the measures were typically not completed at the same sitting, causing the measures to be completed at different times. Many respondents did complete the online measure the same day as the paper/pencil measures, others completed the measures days (and in some cases weeks) apart. This is a possible limitation of the study since the administration of the online measure was not supervised.

Because a respondent's frame-of-reference has been shown to make s difference in the validity of a measure, future studies should examine any differences in NEO-FFI scores with and without a specific work-related frame-of-reference. Also, it may be valuable to add a frame-of-reference to each item on the WPI as well to see if it adds to its validity. Currently, seventy-five of the two hundred and sixteen items (34.7%) on the WPI contain a specific work-related frame of reference (such as "at work," "on the job," or "with employees"). The remaining items do not provide a frame of reference for the respondent. For example, the item "When I disagree with someone I typically tell them" does not contain a frame-of-reference and may be answered differently depending on the reference used by each respondent. It is unknown whether or not specifying "workplace" in the title of the measure provides enough of a frame-of-reference that stays with the respondent throughout each item of the test.

While the current study used the five factors of the NEO-FFI and general self-efficacy to predict workplace personality domains, future study could add predictor

variables of locus of control and self-esteem in order to further the research in core self-evaluations. Since generalized self-efficacy was not shown to be a significant predictor of any of the workplace domains, it would be interesting to see if adding other self-evaluations would provide any predictive power.

Another notable issue involves the differing specificity of the two measures compared. The NEO-FFI is the short form of the Revised NEO-PI, which contains two hundred and forty three items and contains thirty additional facet scales. There are six facet scales that make up each of the five measured factors. Therefore, the NEO-PI provides more specificity than the NEO-FFI, and perhaps more consistent with the level of specificity the WPI provides. Future studies should compare the WPI with the more specific NEO-PI to see if the areas of the WPI that did not correlate with the NEO-FFI are accounted for by the NEO-PI. Finally, since the present study provided a comparison of the NEO-FFI and the WPI and outlined the ways in which they measure similar and different constructs, a next logical step is to compare how well each measure predicts work-related outcome variables (such as job satisfaction or performance). This would also add to the validity of the WPI in that it would provide some indication that the WPI is performing as intended.

In summary, the present study adds to the research in Social Cognitive Career Theory that emphasizes the importance of self-efficacy to career development and performance by demonstrating positive and significant correlations between general self-efficacy and some personality traits that have been shown to contribute to success in the workplace. When interviewing potential job candidates, it may be beneficial for

employers to assess the self-efficacy of the interviewee in addition to workplace

personality traits. The fact that the WPI taps into different traits that the NEO-FFI does

not speaks to the uniqueness of workplace personality when compared to personality in

the general sense and the use of utilizing measures of workplace personality in a

vocational setting.

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