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Cross Cultural Meta-analysis of Personality and Leadership Effectiveness and Evaluation of Changes Over Time

Laura Lynn Motel
University of Wisconsin-Milwaukee

CROSS CULTURAL META-ANALYSIS OF PERSONALITY AND LEADERSHIP EFFECTIVENESS AND EVALUATION OF CHANGES OVER TIME

by

Laura Motel

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ABSTRACT

CROSS CULTURAL META-ANALYSIS OF PERSONALITY AND LEADERSHIP EFFECTIVENESS AND EVALUATION OF CHANGES OVER TIME

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Laura Motel

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The research integrates and expands upon trait theory and culturally-endorsed leadership theory by performing a meta-analysis of the big five personality traits relationships with leadership effectiveness through a cultural and temporal lens. Using only organizational and military/government samples, this investigation delivers three important contributions; corroborates support for trait theory, reveals trait variability, and identifies trends in global leadership. In order to be a "Great Man", a person needs to be born with the right traits at the right time in the right place. Consistent with prior meta-analytical research, big five traits consistently predicted leadership effectiveness, further supporting trait theory. While all traits demonstrated variability by culture and time, agreeableness and extraversion were most pronounced. Germanic and Confucian cultures produced uniquely different results for extraversion. Agreeableness appeared culturally consistent, and not only increased over time, but also produced two distinctly different time periods. Culturally-endorsed leadership theory may explain these outcomes. Results are discussed with respect to cultural convergences, globalization and the nascent field of global leadership.

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LIST OF ABBREVIATIONS

ANOVA	Analysis of Variance
CLT	Culturally-endorsed Leadership Theory
FFM	Five Factor Model
GLOBE	Global Leadership and Organizational Behavior Effectiveness
ILT	Implicit Leadership Theory

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I. LITERATURE REVIEW

Overview

Leadership theories provide frameworks for describing skills, developing training, and predicting outcomes for emergent and effective leaders. Trait theory argues thatgreat leaders possess certain characteristics. Multiple meta-analyses support traits as predictors of performance or effectiveness (i.e., Barrick & Mount, 1991; DeRue, Nahrgang, Wellman, & Humphrey, 2011 Judge, Bono, Ilies, & Gerhardt, 2002; Salgado, 1997). However, management research often gravitates towards using North American rather than global models (Tsui, 2007). Culturally endorsed implicit leadership theory (CLT) purports distinguishing cultural attributes predict leader attributes and behaviors most commonly enacted, effective and accepted in that culture (House, Hanges, Ruiz-Quintanilla, Dorfman, Javidan, Dickson & Gupta, 1999). CLT proposes a relationship between culture, organizations, and leaders. Yet no comprehensive cross-cultural analysis looks at both theories to analyze the cultural variability of a trait.

Hofstede (1983) stated, "The naïve assumption that management is the same or is becoming the same around the world is not tenable in view of these demonstrated differences in national cultures" (p. 85). Hofstede's statement incorporates two critical points; cultural differences and the cultural convergence of management over time. A culturally-holistic meta-analysis is particularly important given the globalization of companies. Making hiring or promotion decisions on "good" leadership traits, while failing to recognize cultural variation, reduces the effectiveness of the process.

Hofstede's second point, that management is, "…becoming the same…" indicates the possibility of change. Despite significant technological, political, and social changes occurred over the past several decades, temporal consistency of traits as predictors has not been

thoroughly examined. Additionally, the CLT propositions indicate that leaders and organizations influence cultural perceptions of effective leadership. This change would also occur over time. Therefore, this study inspects the cultural variation and temporal consistency of FFM personality traits in predicting effectiveness outcomes and discusses cultural trends.

First, this research tests the relationship between big five personality traits and leader effectiveness through meta-analysis. Then, the study explores culture as a moderator, identifying cultural similarities/differences among cultural clusters. Next, the paper investigates the temporal relationship between each trait and leader effectiveness. Finally, through understanding culture and time, cultural convergence assesses the presence or lack of cultural convergence over time due to globalization.

Trait Theory

The trait approach evolved from the "Great Man" theory; the philosophy that leaders are born and not made (Carlyle, 1907). The central proposition of trait theory promotes effective leaders exhibit certain, or a pattern of, innate traits. Multiple meta-analytic findings support relationships between traits and leader effectiveness, perceptions, and emergence. Creativity, charisma, and interpersonal skills correlate with effectiveness (Hoffman, Lyons, Magdalen-Youngjohn, & Woehr, 2011). Intelligence and masculinity predict leadership perceptions (Lord deVader, & Aliger, 1986). Moreover, dominance, sociability, achievement, and dependability as well as, the Big Five (extraversion, conscientiousness, emotional stability and openness) correlate with overall leadership (Judge, et al., 2002). Unlike implicit leadership theories, which suggest traits represent perceptual labels, trait theory suggests that great leaders exhibit certain characteristics and/or trait profiles (Bolden, Gosling, Marturano & Dennison, 2003; Colbert, Judge, Choi, & Wang, 2012). While "Great Man" and trait theories share similar themes

advocating innate characteristics of leadership, they diverge on the amount of success attributable to native traits.

House and Aditya (1997) summarize three key points from trait theory findings to date: (1) there are consistently identified leader traits, (2) effects are enhanced when the trait is relevant, and (3) traits influence behaviors to a greater degree in "weak" (more permissible) situations. Numerous findings support the trait approach, suggesting certain characteristics or profiles influence leadership (e.g., Bolden, Gosling, Marturano, & Dennison, 2003; Colbert, Judge, Choi, & Wang, 2012; Motel & Stoll, 2015). Criticisms of trait theory include framework inconsistency (Colbert, et al., 2012), inability to explain behavior and motivation (Schneider & Smith, 2004), failing to consider context (Ng, Ang, & Chan, 2008), and lacking long term impact (Day, Fleemor, Atwater, Sturm, & McKee, 2013).

This trait study, specifically focusing on the Five Factor Model (FFM), also known as the Big Five, evaluates a leader's level of effectiveness, accounting for several variables including culture, time, and previously identified moderators such as setting and leader level. Thus, the literature review surveys three primary strands of research; personality and leadership, culture and leadership, and then time, leadership and culture. The personality and leadership section first defines the personality traits, leadership, and leadership effectiveness, then presents prior meta-analytic findings. The culture and leadership segment discusses culturally-implicit leadership theory, culture, and implications from prior research. Next, findings relevant to time are examined. Lastly, a summary synthesizes the information.

Personality & Leadership

Five Factor Model (FFM). The Five Factor Model (FFM) or Big Five personality model suggests five major personality domains; extraversion, agreeableness, conscientiousness,

neuroticism and openness (Widiger & Trull, 1997). Goldberg (1993) and McCrae and Costa (1994) provide definitions for each characteristic, summarized as follows. The Agreeableness/Antagonistic trait evaluates a person's good or ill intentions; describing a person's degree of trust, kindness and cooperativeness. Conscientiousness describes the positive end of the spectrum, with traits like scrupulous, hardworking, ambitious, energetic, focused, reliable, and thorough (McCrae & Costa, 1987, p.88). Extraversion/Introversion measures underlying traits like talkativeness and sociability, and enjoying the company of others (McCrae & Costa, 1987). Openness/Closed-mindedness measures traits like imagination, curiosity, and creativity (McCrae and Costa, 1987). Neuroticism/Stability includes traits such as worrying, anxiety, and impulsivity and tendencies to experience negative outlooks and feelings (Uziel, 2006). In a cross-cultural study, McCrae, Terracciano, and Members of the Personality Profiles of Cultures Project (2005), revealed consistency across 50 countries of factor loading to the NEO-PI-R inventory, with the exception of Openness in Botswana. Additionally, prior meta-analyses leverage the FFM citing the personality taxonomy as replicable and generalizable (e.g., Barrick & Mount, 1987; Judge, et al., 2002; Salgado, 1998). This demonstrates the big five traits usefulness in cross-cultural comparatives.

Leadership. A plethora of definitions exist describing leaders and leadership. Mendenhall, Reiche, Bird, & Osland (2012) analyzed the many definitions, suggesting they had little else in common outside of influence, defining it as, "…a process whereby intentional influence is exerted by one person over other people to guide, structure, and facilitate activities and relationships in a group or organization" (p. 500). The influencer, or the leader, organizes a group, directs or guides others, solicits and integrates contributions, and guides the course of action (Kirscht, Lodahl, & Haire, 1959). Since an individual's ability to influence others'

behavior reflects his/her power (McCroskey & Richmond, 1983), often rooted in the familiar categories of reward, coercive, legitimate, referent, and expert (French & Raven, 1959), s/he exists at any level of an organization and requires no formal reporting structure.

Leadership Effectiveness. Leadership effectiveness, different from emergence, describes how well a leader performs in his/her role. DeRue, et al., (2011), cite one reason for varying effectiveness results as inconsistent definitions of leadership effectiveness. Across trait research, studies employ performance assessments, satisfaction, comparisons to non-leaders, and economic benchmarks as outcomes. Performance appraisals (e.g., Crant & Bateman, 2000; Judge & Bono, 2000; Meyer & Pressel, 1954; Strang & Kuhnert, 2009) compare personality test scores to job performance as assessed by self and/or other(s). Satisfaction studies investigate employee job satisfaction, follower job satisfaction, and/or satisfaction with leader, as the dependent variable (e.g., Neubauer, Kreuzthaler, Bergner & Neubauer, 2010; Smith & Canger, 2004). Other studies compare leaders to non-leaders, implying a rise to leadership because of effectiveness (e.g., Meyer & Pressel, 1954; Richardson & Hanawalt, 1944). Economic benchmarks of effectiveness measure financial outcomes, for example, division or team achievement of a sales or profit goal (Aronson et al., 2006; Hunter et al., 2013). These examples highlight the variety of ways leadership outcomes are operationalized. For this meta-analysis, leadership effectiveness is defined as unit-level outcomes; performance appraisals, economic measures, and role comparisons. Before reviewing prior research, a more in depth discussion is warranted comparing effectiveness to job satisfaction as well as job performance.

Effectiveness & Job Satisfaction. While economic, role comparison, performance appraisals, and satisfaction with leader result from another's perception of the leader and his/her ability to succeed at goal achievement, job satisfaction is slightly more contentious. Job

satisfaction defines the affective evaluation while performance relates to organizational goal-oriented behaviors (Alessandri, Borgogni, & Latham, 2016). Conflicting findings exist on the relationship between job satisfaction and performance. Evidence exists suggesting no, or a chance, relationship (Bowling, 2007), a moderate relationship, stronger in more complex jobs (Judge, Thoresen, Bono, & Patton, 2001), and a potential job satisfaction dependency on job performance (Alessandri, Borgogni, & Latham, 2016). In summary, while job performance and job satisfaction may influence each other, they represent separate outcomes.

Clearly defining the outcome, leadership effectiveness, represents a critical aspect in disentangling leadership. Judge, et al., (2002) differentiated leadership in terms of emergence versus effectiveness. DeRue, et al., (2011) distinguished leadership effectiveness measures in terms of content (overall, task- i.e., performance, affective/relational- i.e., follower satisfaction), level of analysis (individual, dyad, group, organizational), and focus of evaluation (leader, other – i.e., group, organization) with results more pointedly indicating which trait(s) effected which outcomes. Therefore, this research defines leadership effectiveness as non-affective performance measures identified as performance appraisals, role comparisons, and economic benchmarks.

Leadership Effectiveness & Job Performance. In terms of the dependent variable, leader effectiveness and job performance represent the likely label for formal versus informal leader, respectively. However, both leader effectiveness and job performance use consistent sources; predominantly performance reviews and additionally, economic/status outcomes. Leadership effectiveness ratings, "…most commonly consist of ratings made by the leader's supervisor, peer, or subordinate…[with]…evidence that ratings of leadership effectiveness converge with objective measures of work performance…" (Judge, et al., 2002, p.767). DeRue,

et al., (2011) define leadership effectiveness as task performance, relational/affective criteria, or a combination of both with task being, "…a general category of leader traits that relate to how individuals approach the execution and performance of tasks (Bass & Bass, 2008)" (p. 13). Similarly, Barrick & Mount (1991) define job performance as a combination of job proficiency, training proficiency, which include performance appraisal, and personnel data, which include salary and status changes (p. 8). Salgado (1998) meta-analyzed job performance noting, "performance ratings are used three or four times more than the other [absenteeism, training, etc.] criteria" (p. 275). Therefore, performance appraisals and economic/status change reflect an appropriate dependent variable for formal and informal leaders, drawing from the performance and leader effectiveness research.

Big Five Personality & Leader Effectiveness – A Meta Perspective. Multiple meta-analyses produced findings positively or negatively associating one or more personality traits with leaders and perceptions of effective leadership. Reviewing prior meta-analyses corrected averages highlight the relative significance of a trait, particularly in a given context, elucidating how and when a trait is more or less important. Since there are numerous meta-analyses, these insights drive the hypotheses.

Overall, meta-analytical results demonstrated a small, positive predictability of agreeableness (Barrick & Mount, 1991; Judge, et al., 2002; DeRue, et al, 2011). However, additional studies refined predictability information. For example, Judge, et al., (2002) revealed a greater relationship with effectiveness when separated from leader emergence and a small, negative relationship in organizational and military samples as opposed to student samples. DeRue, et al., (2011) identified higher relationships with group performance and satisfaction with leader. Finally, Barrick & Mount (1991) demonstrated police and formal managers

revealed higher relationships than other workforce types in their sample. Given the exclusion of student samples in this study agreeableness is likely to have a small positive relationship with leader effectiveness. Therefore, hypothesis 1 posits agreeableness positively predicts leadership effectiveness outcomes.

Hypothesis 1: As Agreeableness increases, overall leadership effectiveness increases.

Conscientiousness is a consistent predictor of effectiveness (Barrick & Mount, 1991; DeRue, et al., 2011; Hoffman, et al., 2011; Judge, et al., 2002). Conscientiousness predicts consistently across occupation types (Barrick & Mount, 1991) and sample types (Hoffman, et al., 2011; Judge, et al., 2002). Given the consistency across meta-analyses, conscientiousness should predict no differently in this study. Therefore, hypothesis 2 predicts conscientiousness positively affects leadership effectiveness outcomes.

Hypothesis 2: As Conscientiousness increases, overall leadership effectiveness increases.

Similar to conscientiousness, extraversion consistently and positively relates to leadership effectiveness (Barrick & Mount, 1991; DeRue, et al., 2011; Hoffman, et al., 2011; Judge, et al., 2002). This relationship remains constant within an organizational and military sample, with military samples demonstrating a smaller relationship (Hoffman, et al., 2011; Judge, et al., 2002). Outcome diversity was identified relative to organizational role, with "Professionals" displaying a negative relationship (Barrick & Mount, 1991). Extraversion appears to have the least impactful effect on salary (DeRue, et al., 2011). Therefore, hypothesis 3 proposes that extraversion positively predicts leadership effectiveness.

Hypothesis 3: As Extraversion increases, overall leadership effectiveness increases.

Openness positively correlates with overall leadership effectiveness with varying – greater (DeRue, et al., 2011; Judge et al., 2002) and lessor (Barrick & Mount, 1991) - degrees.

The outcomes from strictly organizational samples illustrate different potency, high (Judge, et al., 2002a) and very low (Barrick & Mount, 1991). Military samples revealed low positive relationships (Judge, et al., 2002). Finally, different organizational roles produced different results (Barrick & Mount, 1991). Holistically, openness is expected to predict effectiveness.

Hypothesis 4: As Openness increases, overall leadership effectiveness increases.

Overall, neuroticism, or lack of emotional stability, negatively relates to leadership effectiveness (Judge, et al., 2002; Lord, deVader, & Aliger, 1986). Stability predicts overall effectiveness to a lesser degree in organizational samples, relative to other samples (Hoffman, et al., 2011; Judge, et al., 2002). And while stability positively predicted promotions (Barrick & Mount, 1991), no impact exists between stability and group performance (DeRue, et al., 2011), salary and tenure (Barrick & Mount, 1991). Despite the variation in results and particular study sample, stability should predict overall outcomes, providing hypothesis 5.

Hypothesis 5: As Stability increases, overall leadership effectiveness increases.

Culture and Leadership

Culture, represents the "collective agent", an interpretative frame shared by a group (Dahl, 2003; Markus & Kitayama, 1991) largely represented by the "… selection, the rearrangement, the tracing of patterns upon, and the stylizing of… ideas" (Lippman, 1922, p. 16). Intercultural concepts (e.g., collectivism, power distance, and gender egalitarianism) and definitions (e.g., country, region, and organization) are often applied to explain or understand similarities and differences in cultural comparison research. The follow section presents implicit leadership theory (ILT) as it sets the groundwork for culturally-endorsed leadership theory (CLT).

Implicit Leadership Theory. Implicit Leadership Theory (ILT) represents a perception-based theory leveraging leader prototypes as the mechanism for discussing leadership style and evaluating success. Lord and Shondrick (2011) define implicit leadership theory as:

> A perceiver's implicit representation of the prototypical characteristics of a leader and the semantic connections of a leadership category to other closely related constructs such as task performance. When possible, leaders are compared and subsequently matched to an ILT, the individual is labeled as a leader and other related constructs such as the ability to influence others or performance are also activated. ILTs are developed through experience and can be refined to fit a specific context (e.g., business leaders, Japanese business leaders, religious leaders, and female leaders) (p. 208).

Traits represent perceptual labels, rather than objective attributes, used by followers to develop leader prototypes; the likelihood of assuming a leadership role is based on perceived conformance to the leader prototype (Epitropaki & Martin, 2004). Leader categorization, or how a focal person aligns with other leader prototypes, predicts leadership perceptions (Cronshaw, Lord, & Guion, 1987; Epitropaki & Martin, 2004). CLT expands ILT by proposing culture influences the idealized leader perception; producing cultural-level perceived leader prototypes from subjectively-applied, idealized traits.

Culturally endorsed Implicit Leadership Theory. Culturally endorsed implicit leadership theory (CLT) extends implicit leadership theory (ILT) to the cultural level by arguing that the consistent structure and beliefs influence the defining attributes of idealized leaders (Javidan, Dorfman, Sully de Luque, & House, 2006). CLT integrates ILT with cultural value/belief (Hofstede, 1980), motivational (McClelland, 1985), and structural (Donalson, 1993; Hickson, Hinings, McMillan, & Schwitter, 1974) theories (House, et al., 1999). Ultimately, the theory distinguishes how cultural attributes contribute to organizational and leader attitudes and behaviors most frequently enacted, accepted, and effective (House, et al., 1999). Among the key propositions, CLT asserts a reciprocating influence among culture/society, organizations, and

leadership perceptions and practices. Therefore, culturally idealized traits should relate to perceptions and outcomes of leader effectiveness.

FFM, Culture and Leadership Effectiveness. Personality traits offer varying predictability of leader effectiveness by culture. The vast studies included in meta-analyses predominantly include North American, especially U.S., study samples (Salgado, Rumbo, A., Santamaria, G., Losada, 1995). The Global Leadership and Organizational Behavior Effectiveness (GLOBE) project, representing a collaboration of over 160 researchers working with roughly 17,300 participants from 62 cultures, provides the cultural framework applied in this study. Four key findings shared by Dorfman, Javidan, Hanges, Dastmalchian, and House (2012) relate to leadership styles, expectations, cultural grouping, and universal versus specific leader characteristics. First, six global leadership styles comprised of twenty-one primary leadership dimensions emerged from the data. Second, cultural values predict leadership expectations. Third, ten cultural clusters developed from consistency on nine cultural dimensions: (1) power distance, (2) uncertainty, (3) humane orientation, (4) institutional collectivism, (5) in-group collectivism, (6) assertiveness, (7) gender egalitarianism, (8) future orientation, and (9) performance orientation. Countries within clusters employ similar leadership expectations and clusters more closely or distantly relate to other clusters. Fourth, while consistently relative to other clusters, there are more universal and more culturally-specific leadership characteristics.

The GLOBE studies identify descriptive words that reflect universal and culturally variable leadership traits (Hoppe, 2007; House, et al., 1999). These studies identified eight universal characteristics inhibiting leadership effectiveness. Personality is encoded in natural language providing a lexical taxonomy for FFM traits (John & Srivastava, 1999). When these

words are compared to the words describing universally endorsed characteristics of in/effective leaders, agreeableness stands out as universal. Underlying facets of the agreeableness dimension (i.e., cooperative, unselfish) run counter to many descriptions of culturally universal inhibitors (i.e., non-cooperative, egocentric) to leadership effectiveness. Adding support, agreeableness was found to remain consistent between North American and European studies in an exploratory study (Motel & Stoll, 2015).

While some traits may be universal, multiple points of cultural variability potentially exist. Assertiveness, a point of cultural variability on the GLOBE clustering scale, also represents a primary underlying facet of extraversion (Costa & McCrae, 1992; Goldberg, 1999). Cultures higher on the assertiveness pole may reveal greater effects from extraversion. Neurotic individuals worry, and express temper, (McCrae & Costa, 1987) and may fare poorly in cultures with high levels of uncertainty.

Study outcomes also reveal cultural variation. Conscientiousness represents a consistent predictor of overall leadership effectiveness. However, no-to-minor predictability was revealed in a Turkish (Ülke & Bilgiç, 2011) and Israeli (Benoliel, 2014) sample, respectively. Likewise, openness, a strong positive predictor of effectiveness produced culturally different results, for example, negative in a Spanish (Salgado, 1997) and positive in a Singapore (Lim & Ployhart , 2004) sample. However, these represent mere examples rather than a comprehensive list. And while cultural variability provides one explanation for outcome differences between countries, individual test variability presents another explanation, as within country differences are also present. Therefore, researching the cultural variability of FFM traits as predictors of effectiveness is warranted.

Research Question: Is the relationship between personality trait and leadership effectiveness

moderated by cultural differences?

Time, Leadership, and Global Leadership

Globalization, or the impact of broader and greater cultural interactions, reflects an interaction of time and culture. Researchers acknowledge global leadership as a "nascent" field of study (Kim & McLean, 2015; Mendenhall, Reiche, Bird, & Osland, 2012). Tsui (2007) suggests recent and significant changes occurred over the past few decades; thus, global leaderships newness and increasing importance may be an outcome of globalization. Accepting global leadership as a new research avenue means accepting that leadership changes over time. While Mehrabanfar (2015) argues cultural distinctions will present smaller effects as globalization continues, Hofstede (1983) argues that assuming management is less effected by culture is naïve.

These broader cultural interaction requirements transform the competencies necessary from effective leaders. Kim and McLean (2015) note that global leadership requires four competencies; intercultural, interpersonal, global business, and global organizational each possessing three levels, traits, character, and ability. Yet, if traits represent a subset of each competency, then research must explore and explain the cultural variability and/or consistency in traits.

Even within the US, the workplace has changed over the past century. Licht (1988) describes significant improvement in workplace standards and conditions, increased ethnic, racial, and biological sex diversity within organizations and cites the, "…shift from farm to office is the most notable story to be told in the history of the workplace in recent times" (p. 75). These changes affect the composition and effect of personality. For example, women are generally more neurotic, extraverted, and agreeable (Lippa, 2010; Schmitt, Realo, Voracek, &

Allik, 2008), with greater conscientiousness but less openness to experience than men (Schmitt, et al., 2008). Thus, if workforce composition has changed, the aggregate personality has changed accordingly. Furthermore, meta-analytic findings indicate differences in trait predictability as a result of the sample job setting (Barrick & Mount, 1991; Salgado, 1997). If the mass migration of employee location from farm to office truly represents the most notable story, this affects the overall impact of traits on effectiveness.

Bass and Bass (2008) describe the leadership style progression in the 20th century as moving from demanding obedience to a more consultative and shared approach. In an exploratory meta-analysis, Motel and Stoll (2015) identified temporal relationships between personality trait and leadership effectiveness, highlighting increases/decreases in contribution from a specific trait; agreeableness and conscientiousness increased, extraversion and neuroticism decreased, and openness remained constant in predicting leadership effectiveness. Given all the organizational, technological, social, economic, and political change, within the U.S. and global, trait theory must explain whether leader traits are constant, leading to hypotheses 6 - 10.

Hypothesis 6: As the years increase, the relationship between Agreeableness and overall leadership effectiveness increases.

Hypothesis 7: As the years increase, the relationship between Conscientiousness and overall leadership effectiveness increases.

Hypothesis 8: As the years increase, the relationship between Extraversion and overall leadership effectiveness decreases.

Hypothesis 9: As the years increase, the relationship between Openness and overall leadership effectiveness remains constant.

Hypothesis 10: As the years increase, the relationship between Stability and overall leadership effectiveness increases.

Lastly, the results from culture and time naturally lead to a preliminary evaluation of globalization. The relationship between culture and time warrants initial exploration. In order to establish if a basis for future research exists, an initial review of trends over time is essential.

Summary

Leaders influence people. Leadership effectiveness describes the quality of overall, task, and relational outcomes. Trait theory proposes that effective leaders exhibit certain, or a pattern of, innate traits. Multiple meta-analytic findings support relationships between traits and leader effectiveness, perceptions, and emergence. The FFM, consisting of agreeableness, conscientiousness, extraversion, openness, and stability, reflects a widely accepted framework demonstrating appropriate cross-cultural consistency.

As cited throughout the paper, the FFM consistently predicts, to varying degrees, leadership in/effectiveness. Given the number of meta-analyses on FFM and leader effectiveness, this investigation expects consistent results, particularly with prior research separating organizational and military samples. Each of the traits is expected to positively predict leadership effectiveness. However, some traits are expected to predict universally while others predict variably by culture.

Heraclitus famously stated, "everything changes but change itself…", and leadership represents no exception. The organizational, social, political, economic, and technological change over the past century, occurring at a more rapid pace in the past few decades, suggest different skill requisites to successfully influence groups. Probing research suggests traits predictability changes over time with agreeableness, conscientiousness, and stability growing

increasingly importance, extraversion less significant, and openness remaining relatively constant (Motel & Stoll, 2015). This study posits a consistent outcome. In summary, this study proposes a meta-analysis to provide a holistic approach to temporal, cross-cultural, leadership trait theory and CLT research.

II. METHODS

Overview

This meta-analysis evaluates the overall, temporal, and cross-cultural implications of leader big five personality traits as predictors of effectiveness. Performing a meta-analysis serves two primary and significant functions; reducing Type II error, or false negative outcomes, through a larger sample and providing focus for future research (Allen, 2009). This study employs the random effects model of Hunter and Schmidt (2004), discussed in further detail in the statistical analysis section. Multiple meta-analyses evaluate the impact of FFM trait, leader level, sample type, and effectiveness outcome providing the groundwork for this process. This study differentiates by questioning the cross-cultural and temporal consistency of trait theory.

Literature Search

Balance represents a significant design concern for this analysis. An initial exploration of ABI/INFORM Complete using the key phrases of "leader effectiveness and personality and quantitative", including scholarly publications, dissertations, conference papers, and working papers, written in English produced 11,666 results. Therefore, the criteria for inclusion were defined as:

1. Leader effectiveness, the dependent variable, reflects an outcome measured by unit-level (economic, performance appraisal, comparative to non-leader) outcomes.

2. One or more of the Big Five dimensions is/are explicitly named as the predictor variable/s. Exceptions were made for studies pre-dating the Big Five, specifically, "Sociability" substituted for Extraversion where the Bernrueter Personality Inventory (1935), Gordon Personality Profile (1953), Guildford series (n.d; 1949), and Turkish Armed Forces Personality Inventory (TAFPI) were employed.

3. The sample represents a country included in a GLOBE cultural cluster.

4. Samples excluded students unless students were specifically addressed in an organizational context such as sorority, military officers, and/or graduate students evaluated by current employers.

Multiple steps were taken to comprehensively identify relevant studies. First, the bibliographies of five prior meta-analyses (DeRue, et al., 2011; Judge, Bono, Ilies, & Gerhardt, 2002; Lord, deVader, & Alliger, 1986; Salgado, 1997; Salgado, 1998) were reviewed in depth while a literature summary available pre-meta-analysis (Guion & Gottier, 1965) was audited for potentially relevant manuscripts. Next, electronic databases, PsycArticles, PsycINFO (1887–2008) and Web of Science ISI (1970– 2008), were searched for combinations of *big five, personality, openness, stability, neuroticism, agreeableness, conscientiousness, extraversion, extroversion, introversion, performance, effectiveness*, and *leadership, leader,* and *manager*, in combinations of title and subject, filtered where possible to the countries included in the framework. Then, military databases including, the Military and Government Collection of EBSCO Host, the Defense Technical Information Center, and Air War College, Air University, were explored. Afterward, Leadership Quarterly, Journal of Intercultural Communication, and Journal of Cross-Cultural Management were scanned for relevant manuscripts.

Then, in an effort to find more foreign studies, a rudimentary Google Scholar search was completed in Spanish, combining *personalidad* (personality), *eficacio* (effectiveness), and *personalidad y rendimiento en el trabajo* (personality and job performance), and Portuguese, *personalidade como um preditor de desempenho* (personality as a predictor of performance). The author possesses elementary Spanish reading skills and written Portuguese resembles

Spanish sufficiently for the initial simplicity of the search. Finally, randomly found articles were included in the study.

Translating Foreign Language Manuscripts. In total, 40 foreign language manuscripts were reviewed during the process. This meta-analysis includes 12 foreign language (non-English) manuscripts; 8 in Spanish, 2 in Portuguese, 1 in German, and 1 in Slovenian. Often times, English abstracts accompany the publication. Manuscripts in Spanish (e.g., Alonso, 1979; Salgado, 1995; Serrano, 2012) were first reviewed by the author using basic capabilities in reading Spanish and validated, when in question, using Google Translate. Portuguese titles, then abstracts, were first reviewed for key words then, followed the process of the other languages. Alternate language manuscripts, typically found through an English abstract, were handled by first identifying if a correlation table was present. Then, Google Translate was used to identify sample demographic and population, variable definition, measures used, and how measures were administered. Notes written while translating non-Spanish documents are available upon request. The remaining 28 foreign language manuscripts (23 in Spanish, 3 in Portuguese, 1 in Dutch and 1 in Chinese) were excluded for reasons consistent with the overall exclusion summary. The benefit of adding foreign language studies, delivering a more robust cross-cultural analysis, outweighs the risk of omitting a foreign article due to mistranslation and/or potential mistranslation of included articles.

Included and Excluded Studies. Well over 500 studies were aggregated for review. A few hundred were eliminated upon reading the title for including key exclusionary terms such as, "students", "meta-analysis", or "literature review". In total, 311 manuscripts were read; 98 were included, 213 were excluded. Of the 213 excluded manuscripts, 31 lacked appropriate effectiveness outcomes, 78 used non-FFM variables, 50 employed the inappropriate sample type

(i.e., students, wrong country) for this study, 6 measured non-leader personality, 31 omitted quantitative data or provided non-convertible data, and 8 were not quantitative studies or meta-analyses. In addition, 9 studies could not be located. Appendix B summarizes the studies included for analysis. Two studies, McHenry, Hough, Toquam, Hanson, and Ashworth (1990) and Van der Linden, Bakker, and Serlie (2011), represented significantly larger sample sizes than the other studies and were excluded. Hunter and Schmidt (2004) indicate weighted averages are particularly skewed by outlier studies having more than four or five times the size of the others.

Coding of Studies

Multiple coding requirements exist; year of publication, country, cultural cluster, leader level, and affiliation of the sample population. Year of publication and cultural cluster allow the evaluation of cultural differences and change over time. The coding methods are defined as follows.

Cultural Cluster. As noted earlier, only studies using samples from countries included in the culture mapping identified in House, et al., (1999) are included. Anglo includes Canada, U.S.A., Australia, Ireland, England, South Africa (white sample), and New Zealand. Germanic includes Austria, the Netherlands, Switzerland (German speaking), and Germany. Latin European includes Israel, Italy, Switzerland (French speaking), Spain, Portugal, and France. African includes Zimbabwe, Namibia, Zambia, Nigeria, and South Africa (black sample). Eastern European includes Greece, Hungary, Albania, Slovenia, Poland, Russia, Georgia, and Kazakhstan. Middle Eastern includes Turkey, Kuwait, Egypt, Morocco, and Qatar. Confucian includes Singapore, Hong Kong, Taiwan, China, South Korea, and Japan. Southeast Asian includes Philippines, Indonesia, Malaysia, India, Thailand, and Iran. Latin American includes

Ecuador, El Salvador, Colombia, Bolivia, Brazil, Guatemala, Argentina, Costa Rica, Venezuela, and Mexico. Nordic includes Denmark, Finland, and Sweden.

Leader Level. Leader level is identified in prior research as moderating leadership outcomes (Hoffman, et al., 2011). However, the limited definition of the two groups as defined by Hoffman et al., (2011) was, "first line supervisors/low level managers, or mid/upper level managers" (p. 355). Given the variations in the definitions used in research, and practice, coding includes C-level manager/leaders (or military equivalent), formal managers, informal leaders (employees), and group.

Sample Affiliation. Studies predominantly recruit participants from three environments, universities, organizations/businesses, and the military. Prior meta- analyses identified participant affiliation as a moderator (Judge et al., 2002; Hoffman, et al., 2011). Judge et al., (2002) revealed extraversion as the only significantly predicting personality criteria spanning the three populations. The remaining personality traits varied in effectiveness by affiliation context. Therefore, this study codes for sample population environment; excluding students and differentiating between organization and military.

Statistical and Data Analysis

This study employs the random effects model of Hunter and Schmidt (2004), allowing variance in population parameters and weighting how studies contribute to variability (Allen, 2009). Using the Hunter and Schmidt (2004) process, coders convert individual study data to a common metric (correlation coefficient for this study), correct for error, and weight average corrected correlations for sample size. This study required correction for measurement error to adjust for test reliability. Specifically, FFM dimensions and effectiveness measures were corrected for measure reliability using, in this order, the reliability published in the individual

study, in reliability research, or the average of its group. The majority of studies, particularly more recent (i.e., last 25 years), included reliability data. To summarize, weighted average was used throughout formulas to account for sampling error.

Data analysis was performed using Excel. First, analysis required aggregating descriptive statistics and calculating chi square. Descriptive statistics include the number of data points, sample total, and average, weighted, corrected correlation. Chi-square was employed to assess homogeneity. Confidence intervals (CIs) were calculated at 95% to determine significance, with the low and high end reported in tables. ANOVA was used to identify significant between-group cultural and time period variability on any group where $k > 7$. If significant, Tukey post-hoc was used. Correlation required a weighted formula to adjust for individual study size and properly manage sampling error.

III. RESULTS

Overview – Personality & Leadership Effectiveness

In total, 373 data points representing 9 of the 10 clusters, were collected for a combined sample size of N = 87,047. In aggregate, traits predicted leader effectiveness (r = .163, p < .05) in a significantly heterogeneous sample, $\chi 2$ (372, 87,046) = 7,098, p < .05. All correlations reported that are represented by r reflect corrected r.

Hypothesis 1 – Agreeableness

Hypothesis one, predicting that as agreeableness increases, overall leadership increases, received support. Agreeableness positively predicted effectiveness (r = .182, p < .05). (See Table 1). Significant variability exists within the data, $\chi 2$ (63, 16,280) = 915, p < .05, suggesting one or more moderators. Sample type moderated effectiveness; military samples revealed a stronger relationship (r = .270, p < .05) than organizational samples (r = .121, p < .05). However, neither military $\chi 2$ (11, 6,667) = 530, p < .05, nor organizational $\chi 2$ (51, 9,614) = 363, p < .05, reflected homogeneous outcomes. (See Table 2). Leader level also moderated; formal managers revealed a stronger relationship (r = .268, p < .05) than informal leaders (r = .105, p < .05). Top managers and groups did not meet the reporting threshold of 8. (See Table 3). Leader level did not produce homogeneous groups for formal $\chi 2$ (28, 7,218) = 571, p < .05 or informal $\chi 2$ (27, 8,028) = 204, p < .05, leaders.

Hypothesis 2 – Conscientiousness

Hypothesis two received full support. Conscientiousness positively predicted (r = .197, p < .05) leader effectiveness. (See Table 1). Like agreeableness, significant variability exists within the data $\chi 2$ (76, 18,377) = 1,089, p < .05, suggesting the presence of one or more moderators. Sample type slightly moderated effectiveness; organizational samples revealed a

stronger relationship (r = .203, p < .05) than military samples (r = .185, p < .05). However, neither military $\chi 2$ (12, 6,303) = 429, p < .05, nor organizational $\chi 2$ (63, 13,083) = 824, p < .05, reflected homogeneous outcomes. (See Table 2). Leader level was also identified as a moderator; formal managers revealed the strongest relationship (r = .252, p < .05), followed by informal leaders (r = .167, p < .05), and top managers (r = .066, p > .05). Groups did not meet the reporting threshold of 8. (See Table 3). Leader level did not produce homogeneous groups for formal $\chi 2$ (31, 7,651) = 506, p < .05, informal $\chi 2$ (36, 9,876) = 506, p < .05, or top managers $\chi 2$ (6, 792) = 64, p < .05.

Hypothesis 3 – Extraversion

Hypothesis three received full support. Extraversion positively predicted leader effectiveness (r = .128, p < .05). (See Table 1). Once again, the sample was heterogeneous, χ^2 =(95, 21,332) = 968, p < .05. Sample type revealed a similar results for military (r = .125, p > .05) and organizational samples (r = .129, p > .05). (See Table 2). Leader level revealed small differences in results; top managers (r = .148, p < .05) and formal managers (r = .158, p < .05) were fairly consistent and both greater than informal leaders (r = .095, p < .05). Groups did not meet the reporting threshold of 8. (See Table 3). Leader level did not produce homogeneous groups for top $\chi 2$ (11, 1,481) = 91, p < .05, formal $\chi 2$ (42, 10,319) = 576, p < .05, or informal $\chi 2$ (38, 9,346) = 272, p < .05, leader groups.

Hypothesis 4 – Openness

Full support was found for hypothesis four. Openness positively predicted (r = .184, p < .05) leadership effectiveness. (See Table 1). Significant heterogeneity exists within the sample, χ^2 (58, 15,332) = 810, p < .05. Openness produced the largest effect among the five traits. Sample type moderated effectiveness; military samples revealed a stronger relationship (r = .240,

$p < .05$) than organizational samples ($r = .140$, $p < .05$). However, neither military $\chi 2$ (11, 6,727) = 403, $p < .05$, nor organizational $\chi 2$ (45, 8,605) = 369, $p < .05$, reflected homogeneous outcomes. (See Table 2). Leader level moderated outcomes; formal managers ($r = .267$, $p < .05$) produced greater effects than informal leaders ($r = .100$, $p < .05$). Groups and top managers did not meet the reporting threshold of 8. (See Table 3). Leader level did not produce homogeneous groups for either formal $\chi 2$ (26, 6,899) = 481, $p < .05$, or informal $\chi 2$ (25, 7,724) = 176, $p < .05$, leader groups.

Hypothesis 5 – Stability

Hypothesis five received full support. Stability positively predicted overall effectiveness ($r = .107$, $p < .05$) (See Table 1). The sample was significantly heterogeneous, χ^2 (87, 18,425) = 1,014. Sample type revealed stronger results for organizational ($r = .137$, $p > .05$) versus military/government samples ($r = .053$, $p > .05$). (See Table 2). Leader level was also identified as a moderator; formal managers revealed the strongest relationship ($r = .183$, $p < .05$), followed by informal leaders ($r = .071$, $p < .05$), and top managers revealed a negative relationship ($r = -.076$, $p > .05$). Groups did not meet the reporting threshold of 8. (See Table 3). Leader level did not produce homogeneous groups for formal $\chi 2$ (39, 7,848) = 394, $p < .05$, informal $\chi 2$ (38, 9,297) = 414, $p < .05$, or top managers $\chi 2$ (7, 1,212) = 91, $p < .05$.

Research Question – Culture

The research question sought to identify cultural differences in the relationship between personality and leadership effectiveness. In total, 373 data sets representing 9 of the 10 clusters, were collected for a combined sample size of $N = 87,047$. The difference between the 373 sets reported here and the 383 data sets reported earlier, along with corresponding values, is related to two South African studies that could not be categorized in clusters. The coding scheme

differentiates by race in South Africa; black and white participants are coded as African and Anglo, respectively. Neither study reported the race of the sample.

As a whole, traits predicted leader effectiveness differently by culture. The Middle Eastern cluster revealed the highest effect ($r = .468$, $p < .05$), followed by, in descending order, Latin American ($r = .318$, $p < .05$), Southeast Asian ($r = .218$, $p < .05$), Confucian ($r = .159$, $p < .05$), Latin European ($r = .131$, $p < .05$), Nordic ($r = .113$, $p < .05$), Anglo ($r = .112$, $p < .05$), and Germanic ($r = .029$, $p < .05$). The number of Eastern European studies did not meet the threshold. Aside from the South African studies which could not be classified, no African studies were found. (See Table 4).

ANOVA revealed significant differences among the cultural clusters $F(7,86,724) = 3,128$, $p < .05$. (See Table 5). In addition to producing the largest effect size between personality and leadership effectiveness, the Middle Eastern cluster was significantly different from, and greater than, every other cultural cluster. The second largest effect, Latin American, produced results significantly different from all clusters except for the Southeast Asian cluster. Lastly, the Germanic cluster was significantly different from – less than - the Southeast Asian cluster.

The research question results are presented by trait. All calculated results are presented in tables. However, consistent with the study thus far, written explanations of results are only provided when the number of data sets exceeds the threshold of greater than or equal to 8.

Agreeableness. The agreeableness relationship with leadership effectiveness was strongest in Anglo cultures ($r = .113$, $p < .05$), followed by Confucian ($r = .094$, $p < .05$), and then Germanic ($r = .042$, $p > .05$). (See Table 6). ANOVA revealed significant cultural differences, $F(2,15,001) = 160$, $p < .05$, in agreeableness as a predictor of leader effectiveness (See Table 7). However, Tukey post-hoc revealed no significantly different cultural groups.

Conscientiousness. The relationship between conscientiousness and leadership effectiveness was strongest in Anglo cultures (r = .208, p < .05), followed by Confucian (r = .214, p < .05), and then Germanic (r = .017, p > .05). (See Table 6). ANOVA revealed significant cultural differences, F(2,11,991) = 1,042, p < .05, in conscientiousness as a predictor of leader effectiveness (See Table 7). The difference between both Anglo and Confucian cultures and the Germanic culture was large, but only approached statistical significance.

Extraversion. The relationship between extraversion and leadership effectiveness was strongest in Confucian cultures (r = .226, p < .05), followed by Anglo (r = .092, p < .05), and then Germanic (r = -.016, p > .05). (See Table 6). ANOVA revealed significant cultural differences, F(2,13,432) = 1,292, p < .05, in extraversion as a predictor of leader effectiveness (See Table 7). Tukey post-hoc revealed significant cultural differences between the Germanic and Confucian cultures.

Openness. The relationship between openness and leadership effectiveness was strongest in Confucian cultures (r = .138, p < .05), followed by Germanic (r = .100, p < .05), and then Anglo (r = .072, p > .05). (See Table 6). ANOVA revealed significant cultural differences, F(2,8,672) = 96, p < .05, in openness as a predictor of leader effectiveness (See Table 7). However, Tukey post-hoc revealed no significant cultural differences.

Stability. The relationship between stability and leadership effectiveness was strongest in Anglo cultures (r = .081, p < .05), followed by Confucian (r = .080, p > .05), and then Germanic (r = .009, p > .05). (See Table 6). ANOVA revealed significant cultural differences, F(2,12,181) = 98, p < .05, in openness as a predictor of leader effectiveness (See Table 7). However, Tukey post-hoc revealed no significant cultural differences.

Overview – Personality & Time

In aggregate, traits increasingly (r = .163, p < .05) predicted leader effectiveness over time. For each hypothesis, three clusters exceeded the threshold, providing an opportunity to analyze; Anglo, Germanic, and Confucian. The Confucian culture produced the largest, positive relationship (r = .367, p < .05, N = 14,227) with time, followed by Germanic (r = .317, p < .05, N = 13,637), and then Anglo (r = .122, p < .05, N = 27, 995). However, the date range of data was much broader for the Anglo cluster. If the Anglo subset is reduced to mirror the Germanic cluster, eliminating data before 1993, the relationship between personality as a predictor of leadership effectiveness and time increases dramatically (r = .231, p < .05, N = 22, 385). (See Table 8).

Hypothesis 6 - Agreeableness Consistency over Time

Hypothesis 6, which predicted that as the years increase, the relationship between Agreeableness and overall leadership effectiveness increases, was supported. Overall, the dates of studies ranged from 1952 – 2016. A significant positive relationship (r = .262, p < .05, N = 16.281) indicates increasing predictability over time respective to agreeableness and leader effectiveness. The Germanic culture produced the largest, positive relationship (r = .581, p < .05, N = 2,724) with time, followed by Anglo (r = .238, p < .05, N = 4,796), then Confucian (r = .032, p < .05, N = 2,089). (See Table 8).ft

Hypothesis 7 - Conscientiousness Consistency over Time

Hypothesis 7 predicted that as the years increase, the relationship between Conscientiousness and overall leadership effectiveness increases. The results supported the hypothesis; a positive relationship (r = .171, p < .05, N = 18,378) exists between conscientiousness as a predictor of leadership effectiveness and time. (See Table 7). The

Germanic culture produced the largest, positive relationship (r = .769, p < .05, N = 2,829) with time, followed by Confucian (r = .479, p < .05, N = 4,063), and then Anglo culture (r = .176, p < .05, N = 5,111). (See Table 8).

Hypothesis 8 - Extraversion Consistency over Time

Hypothesis 8 predicted that as the years increase, the relationship between Extraversion and overall leadership effectiveness decreases. The results contradicted the hypothesis. A positive relationship (r = .181, p < .05, N = 21,332) exists between conscientiousness as a predictor of leadership effectiveness and time. The Anglo culture produced the largest, positive relationship (r = .182, p < .05, N = 7,764) with time, followed by Germanic (r = .145, p < .05, N = 2,722). The Confucian cluster (r = -.300, p < .05, N = 2,947) revealed a negative relationship with time. (See Table 8).

Hypothesis 9 - Openness Consistency over Time

Hypothesis 9 predicted that as the years increase, the relationship between openness and overall leadership effectiveness remains constant. No support was found. Openness as a predictor of leadership effectiveness produced the largest positive (r = .262, p < .05, N = 15,332) relationship with time. The Confucian culture produced the largest, positive relationship (r = .383, p < .05, N = 2,089) with time, followed by Anglo (r = .335, p < .05, N = 4,130), then Germanic (r = .277, p < .05, N = 2,456). (See Table 8).

Hypothesis 10 - Stability Consistency over Time

Hypothesis 10 which predicted that as the years increase, the relationship between stability and overall leadership effectiveness increases, was supported. However, the positive relationship was the smallest (r = .039, p < .05, N = 33,254) among the personality dimensions. The Confucian culture produced the largest, positive relationship (r = .801, p < .05, N = 3,039)

with time, followed by Germanic (r = .147, p < .05, N = 2,951). A minimally positive relationship (r = .020, p > .05, N = 6,194) was revealed for the Anglo cluster. (See Table 8).

Time can also be measured in periods, i.e., an era. While the studies used in this meta-analysis range from 1944 – 2016, the majority of the data (90.3% of data points and 94.4% of sample) originates from publications after 1990. Five time groups were established; 1944 – 1970, 1971 – 1990, 1991 – 2000, 2001 – 2010, and 2011 – 2016. Overall, 1944 – 1970 revealed the lowest predictability score (r = .076, p < .05) while 2011 – 2016 resulted in the highest predictability score (r = .211, p < .05). (See Table 9). While ANOVA produced significant differences for conscientiousness F(2,18,384) = 1,281, p < .05, extraversion F(4,26,722) = 381, p < .05, openness F(2,15,329) = 596, p < .05, and stability F(4,18,420) = 595, p < .05, only agreeableness F(3,16,277) = 560, p < .05 produced significantly different time categories at the post-hoc level. Tukey post-hoc for agreeableness revealed 2011 – 2016 data was significantly greater than and different from 1991 – 2000 data. (See Table 10).

With the information about time and culture recorded, trends in globalization can be reviewed. Graphs were created using the means for five year intervals spanning 1991 – 2015, which represented 90.3% of the data sets and 94.4% of the sample size. Overall, clusters with data from at least four of the five intervals (Anglo, Germanic, Latin European, and Confucian) were comparatively graphed for average correlation and number of data points, alongside the group average correlation. (See Figure 1). In order to condense data at the trait level, cultures were grouped dichotomously; as Anglo or non-Anglo. Comparisons overall, and by trait were graphed for average correlation and number of data points (See Figures 2 – Figure 7).

Overall, the aggregated trait graph (Figure 2) illustrates that the trend for aggregate traits for both Anglo and Non-Anglo cultures increase over time. However, the trend lines appear to

be converging, or showing less difference, over time. Both the agreeableness (Figure 3) and conscientiousness (Figure 4) graphs depict trend lines for Anglo and non-Anglo cultures increasing parallel to one another. This indicates time may play a greater role than culture. The agreeableness trend line illustrates a dramatic increase over time. The extraversion graph (Figure 5) emphasizes cultural convergence as the distance in the means over time decrease is more pronounced than the increase over time. The openness graph (Figure 6) resembles agreeableness and conscientiousness with both Anglo and non-Anglo linear trend lines increasing about parallel to each other. Finally, the stability graph (Figure 7) suggests possible divergence or, at least culturally consistent, decreases over time.

IV. DISCUSSION

Trait theory argues that great leaders possess certain characteristics and multiple meta-analyses demonstrate support. This study presents consistent results in support of the theory with each trait revealing a significant positive relationship with effectiveness. However, the crux of this research concerns the influence of culture and time on trait theory. Cultural differences exist at varying degrees among the groups. In aggregate, the Middle Eastern and Confucian cultures revealed the strongest effects from personality, significantly stronger than the other cultural groups. By trait, a comparison of three cultural groups revealed cross-cultural differences, with extraversion producing two distinctly different cultural outcomes; Germanic and Confucian. Trait significance, particularly for openness and agreeableness, appears fluid over time. These results indicate significant, varying degrees of predictability by culture as well as changes in predictability over time. Furthermore, when viewed together, the cultural and temporal trends highlight a variety of interesting relationships. Combined, this study supports the argument that, while traits are valid predictors of effectiveness, trait theory is culturally and temporally inconsistent in different and varying degrees.

The first five hypotheses, all supported, tested the relationship between each FFM personality trait and overall leader effectiveness. Overall, personality positively predicted leadership effectiveness. Consistent with prior meta-analytic research both sample affiliation (organizational and military) and level of leader (top leader, manager, employee contributor, and group/team) moderated the relationship. All traits positively and significantly affected leadership effectiveness outcomes. Openness demonstrated the largest relationship, followed by conscientiousness, agreeableness, stability, and extraversion. For each trait, the discussion

begins by comparing these outcomes to prior meta-analyses (Barrick & Mount, 1991; DeRue, et al., 2011; Hoffman, et al., 2011; Judge, et al., 2002). (See Table 11).

All of the traits demonstrated a positive relationship with time. This supported hypotheses 6, 7 and 10, for agreeableness, conscientiousness, and stability, respectively, contradicted hypothesis 8, for extraversion, and did not support hypothesis 9, arguing for constancy in openness. Furthermore, from a time period perspective, agreeableness produced two significantly different time periods. Cultural differences were identified among the traits, which were even more enlightening when evaluated in the context of time. Each of these findings will be discussed by trait.

Agreeableness. Agreeableness, a consistent positive predictor of leadership effectiveness, appears to be culturally consistent but temporally variable. This supports trait theory and CLT. Comparatively, effect sizes were higher than the DeRue, et al., (2011) and lower than the Judge, et al., (2002) leadership effectiveness outcome but appeared consistent when viewed against comparable samples (exclusive of students). Agreeableness had a much stronger effect in government/military than organizational samples. The organizational sample was relatively close to the Barrick and Mount (1991) but different from the Judge, et al., (2002) research on non-student, predominantly organizational samples. Judge, et al., (2002) revealed a negative effect that was possibly the result of chance. Finally, agreeableness predicted effectiveness with more strength for formal leaders than informal leaders in a higher than but consistent pattern with Barrick's and Mount's findings.

Once compared at the moderator level, results appeared even more consistent with prior research. Agreeableness had a much stronger effect in government/military than organizational samples. The organizational sample was relatively close to prior research on non-student,

predominantly organizational samples (Barrick & Mount, 1991). Finally, agreeableness predicted effectiveness with more strength for formal leaders than informal leaders. While the correlations were both higher than Barrick's and Mount's findings, the pattern was consistent.

Agreeableness appears culturally consistent. Although cultural variability was identified overall, no distinct groups materialized from the three cultures compared, Anglo, Germanic, and Confucian. Words describing agreeableness closely resemble those used in the GLOBE studies to identify universal traits to leadership effectiveness and oppose those used to describe leadership inhibitors (Hoppe, 2007; House, et al., 1999). This result aligns with CLT.

Agreeableness did produce an increasing relationship over time, aligned with hypothesis six. Additionally, a dramatically larger effect size exists in the 2011's as compared to the 1990's. This may suggest events in one period versus the other; perhaps differences in technology, expectations, or even workforce demographics influence trait importance. Alternately, a possible and reasonable explanation includes the growing importance of agreeableness in a global environment. Further support for this suggestion exists in the graphic rendition of time and culture. (See Figure 3). The trend lines for Anglo and non-Anglo cultures are not only parallel, they are also proximally close.

Conscientiousness. Once again, conscientiousness proved to be a consistent predictor of leadership effectiveness, adding support for trait theory. Like agreeableness, this appears to be more culturally than temporally consistent. Comparatively, these findings are consistent with other meta-analyses for overall and moderated outcomes (Barrick & Mount, 1991; DeRue, et al. 2011; Hoffman, et al., 2011; Judge, et al., 2002). Furthermore, conscientiousness appears to cross-organization types and leader levels.

Cultural variation was identified in the three comparative groups (Anglo, Germanic, and Confucian). While Anglo ad Confucian revealed larger effect sizes, the difference only approached statistical significance, indicating other possible reasons, including chance, play a role in the variance. A moderate relationship was found with time. Exploring further, the graph reveals a parallel, almost culturally overlapping line, with a very small slope. (See Figure 4). The magnitude of graph differs from the correlation because the graph presents the weighted mean over the five-year period only. Given the scope of findings, and in relation to the other traits, conscientiousness appears relatively consistent across culture and time.

Extraversion. Consistent with prior studies, extraversion predicted leadership effectiveness. Extraversion appeared more culturally than temporally variable. Additionally, extraversion demonstrated less dramatic effects in this study than prior meta-analyses (DeRue, et al., 2011; Hoffman, et al., 2011; Judge, et al., 2002) which could not be explained as North American-centricity. Organizational samples revealed an outcome consistent with Barrick & Mount (1991) but nearly half the outcomes presented in Hoffman, et al., (2011) and Judge, et al., (2002). While Judge, et al., (2002) may be explained as a difference related to their inclusion of leadership emergence, the inconsistency with Hoffman, et al., (2011) remains. However, since formal leaders revealed larger effects than informed leaders, the sample composition may be contributing to the difference.

Cultural variation was pronounced for extraversion; the Germanic and Confucian cultures were significantly different. Considering assertiveness represents an underlying cultural measure and a measure of extraversion, it seems plausible that the culture valuing extraversion more would deliver the greater effect size. Using a weighted average of the countries in the clusters, Confucian's valued assertiveness more than the Germanic's, in line with the findings.

Overall, a positive relationship with time was identified. Variability was identified among categorical time period groups, yet no two groups were distinctly different. Reviewing the graph, the Anglo compared to the non-Anglo slope illustrates decreasing cultural differences over time. (See Figure 5). This relationship remains constant even if the second period (1996 – 2000) is reduced to a point midway between the points before and after; just in case the single data point is skewing the results.

Openness. In support of trait theory, openness positively relates to effectiveness, consistent with prior meta-analyses research and appears to be influenced by culture and time. Unsurprisingly, these are less dramatic effects than prior meta-analyses (DeRue, et al., 2011; Judge, et al., 2002). However, reviewing through the varying contextual lenses highlights some unique outcomes. The result for the organizational sample was reasonable; higher than Barrick and Mount (1991) and less than Judge, et al., (2002). The government/military outcome was significantly larger than the Judge, et al., (2002) result and cannot be explained by emergence as is it reported in that study as having consistent effects as effectiveness. However, the difference may be explained by North American-centricity as the resulting relationship for openness with effectiveness in Anglo clusters with military samples closely resembling the Judge, et al, findings. Leader level also produced an interesting difference; formal leaders realized more impact from openness than informal leaders.

Despite overall cultural variability, no distinct differences were identified between groups. A positive trait relationship with time was identified and, exploring as Anglo versus non-Anglo level, cultures appear to be moving upwards at a relatively similar pace. (See Figure 6). When comparing the slopes, the trend lines run parallel yet there is a reasonable amount of difference

between the two cultural subsets. Therefore, for openness, trait theory may be inconsistent across cultures and times.

Stability. Consistent with prior meta-analysis, stability predicted effectiveness. However, this outcome appears influenced by culture and time. Comparatively, stability predicted effectiveness consistently with all the other meta-analyses once controlled for students (Barrick & Mount, 1991; Hoffman, et al., 2011; Judge, et al., 2002). The government/military sample was significantly lower than both Hoffman, et al., and Judge, et al., equivalent sample outcomes. This may be explained by cultural variation as the Anglo, military subset produced a much larger effect size; falling midway between the Hoffman, et al., and Judge, et al., outcomes.

Cultural variability exists but may also be influenced by organizational and military sample groups. In order to truly differentiate, more studies/data points are needed. Furthermore, stability demonstrated a positive relationship with time. The Anglo and non-Anglo trend lines for stability intersect. Thus, the assumptive conclusion could be that they are divergent, more time-bound than cultural, or skewed by limited data in one of the time frames. Furthermore, sample composition within cultures may affect the dynamic.

Theoretical Implications

Trait theory argues that effective leaders possess certain traits. Like preceding meta-analyses, this research found support linking traits, specifically the Big Five, to leadership effectiveness outcomes. However, Hofstede's (1983) assertion that leadership effectiveness does not transcend culture and time warranted investigation. This study revealed outcomes supporting variation in trait relevance with leadership effectiveness. Culture and time both contribute to trait importance. Culturally endorsed implicit leadership theory (CLT) purports distinguishing cultural attributes predict leader attributes and behaviors most commonly enacted, effective and

accepted in that culture (House, et al., 1999). The key propositions argue for reciprocal influence between culture and leadership on each other as well as effectiveness and acceptance outcomes. Support for CLT, as well as new insights relative to trait theory, are best highlighted by extraversion and agreeableness.

Clearly, extraversion reflects the trait most significantly influenced by culture and demonstrating an interesting trend over time. The cultural difference within extraversion lacks the element of surprise because assertiveness is both a dimension of extraversion and a basis for the GLOBE cultural clustering (Dorfman, et al., 2012). Germanic and Confucian cultures produced uniquely different results which highlight cultural variation of a trait. CLT suggests that culture/societal value influences leader behavior and shared concepts of leadership. According to the GLOBE assertiveness scales, this particular Confucian cluster values assertiveness more than the Germanic cluster. One explanation may be that the societal value influences the leader's behavior or the rater's evaluation of effectiveness, or both. Additionally, the Anglo versus non-Anglo graph illustrating convergence over time aligned with the CLT proposition that organizational practice effects leader behavior. Globalization of companies may explain the diminishing differences over time.

Agreeableness appeared culturally consistent, and not only increased over time, but also produced two distinctly difference time periods. Similar to extraversion, the cultural consistency of agreeableness lacks surprise because the GLOBE studies descriptions (Hoppe, 2007; House, et al., 1999) of universal qualities that inhibit leadership (i.e., uncooperative, irritable, ego-centric) closely align with antagonist personality tendencies. Ultimately, understanding how not to lead is equally as important in producing normative perceptions of leadership. The temporal inconsistency supports the notion that traits are valued differently at different points in time.

One assumption drawn about time from the cultural consistency is that whatever caused the increasing relevance and two uniquely different time spans, occurred globally rather than locally. Increasing intercultural interaction and leadership resulting from globalization may reinforce the need for agreeable leaders. This explains the increase over time, the time period difference, and supports the CLT notion that organizational practices influence leadership.

Practical Implications

Global leadership is, "the ability to influence people who are not like the leader and come from different cultural backgrounds" (Javidan, Dorfman, Sully de Luque, & House, 2006, p. 85). This reflects the transformation of leadership based on changing needs of organizations. Kimand McLean (2015) note that global leadership requires four competencies; intercultural, interpersonal, global business, and global organizational each possessing three levels, traits, character, and ability. As mentioned earlier, management research often gravitates towards using North American rather than global models (Tsui, 2007). As a result, global leadership perceptions and training warrant attention. If an idealized global leader skill set fosters an Anglo-centric image, and that image drives the training and development, the ultimate practitioner may not succeed in a global role. While each person is born with a specific personality, s/he is not jailed by the profile. Understanding one's personality profile in relation to context – culture and time – enables a leader to adapt his/her strengths to the environment.

Limitations & Future Research

The purpose of this study was to provide a holistic, cross-cultural analysis and assess the impact of time on trait-effectiveness relationship. Three primary limitations exist; excluding behavior mediators, language barriers, and sample type. Behavioral mediators (DeRue, et al., 2011) were excluded to limit the scope of the test as well as an added layer of cultural

complexity. After all, there could be cultural inconsistency in how a specific behavior is defined. Future research should connect the cultural trait and behavior predictors. The GLOBE cultural framework was employed to provide a framework that crosses trait and behavior studies. Second, the studies used are predominantly in English; limiting the comprehensiveness of the results. While key word searches were done in a few foreign languages, more research is likely available in other languages. No key word searches were performed in different characters (i.e., Mandarin, Arabic), Future research may consider comparing two or three cultures only with broader language skills and/or database access. Third, most of the non-Anglo studies indicated publication dates from the last 25 years. Given the student sample research far exceeds organizational and military/government sample research, perhaps a comparable meta-analysis, focusing on students, provides greater opportunities to broaden the investigation. Finally, traits and effectiveness represents only one independent and dependent variable within leadership research. Given the cultural and temporal findings, this research should be extended to other leadership variables; job satisfaction, satisfaction with leader, ethical leadership or organizational citizenship behaviors.

Conclusion

This investigation delivers three important contributions. First, this meta-analysis corroborates support for trait theory consistent with prior analyses. Second, this study provides results revealing trait variability in leadership effectiveness outcomes among cultures and over time. Third, the outcomes suggest support for globalization, and thus, global leadership. In summary, in order to be a "Great Man", a person needs to be born with the right traits at the right time in the right place.

This research integrates and expands on both trait theory and CLT. Trait theory argues that great leaders possess certain common characteristics. This study supports that theory and offers a potential explanation as to why the traits are important. CLT argues that culture influences, and is influenced by, organizations and leaders. Cultural differences are identified in this research, most prominently in extraversion. Results suggesting that extraverts fare better as leaders in societies that value assertiveness - an underlying dimension - makes sense. Future research should consider a cross-cultural analysis mapping these traits with leadership styles. Many leadership theories exist. Perhaps a more robust theory comes from connecting theories.

CLT also provides one explanation why trait effect size might change over time. Cultures change as a result of political, technical, social movements which may also be influenced by leaders or organizations Holistically, an understanding of how effects differ by culture not only contributes to understanding leadership performance, but combined with the temporal implications, may highlight effects of globalization. Future research should expand on globalization investigation, particularly in light of the nascent field of global leadership. There should be greater understanding on if these trends and the prominent, underlying drivers. Global leadership training should not be North American- or Anglo-centric.

V. REFERENCES

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VI. APPENDICES

Appendix A. Figures and Images

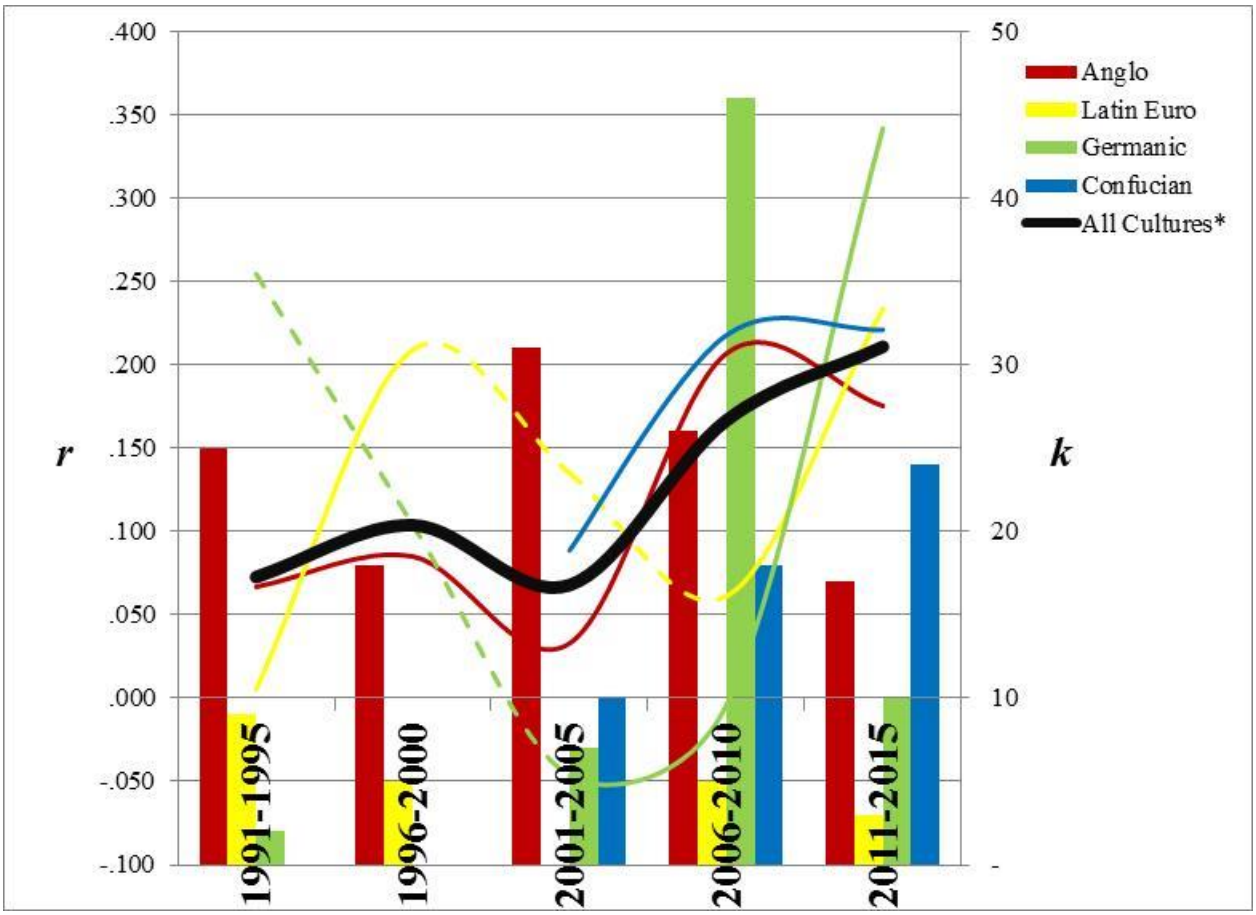

Figure 1. Overall traits as Predictors of Effectiveness (*r*) & Number of Data Sets (*k*) by Culture over Time. Lines represent r and bars represents k.
Dashed lines indicate a connection between data points when a data set is missing.

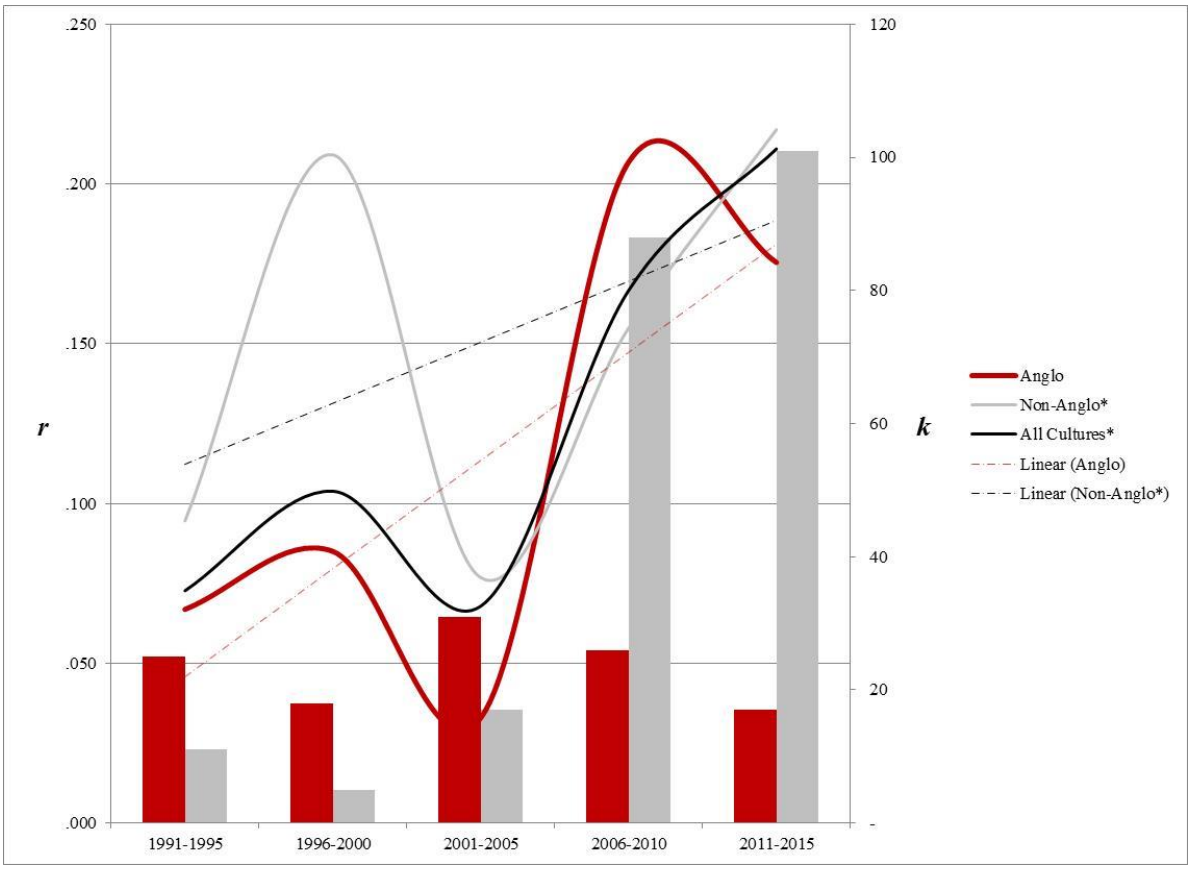

Figure 2. Overall Traits as Predictors of Effectiveness (r) and Number of Data Sets (k) for Anglo an non-Anglo Cultures, and Corresponding Linear Trend Lines. Lines represent r and bars represents k.
Notes: Red is Anglo. Grey is non-Anglo. Dotted lines reflect linear trends in corresponding colors.

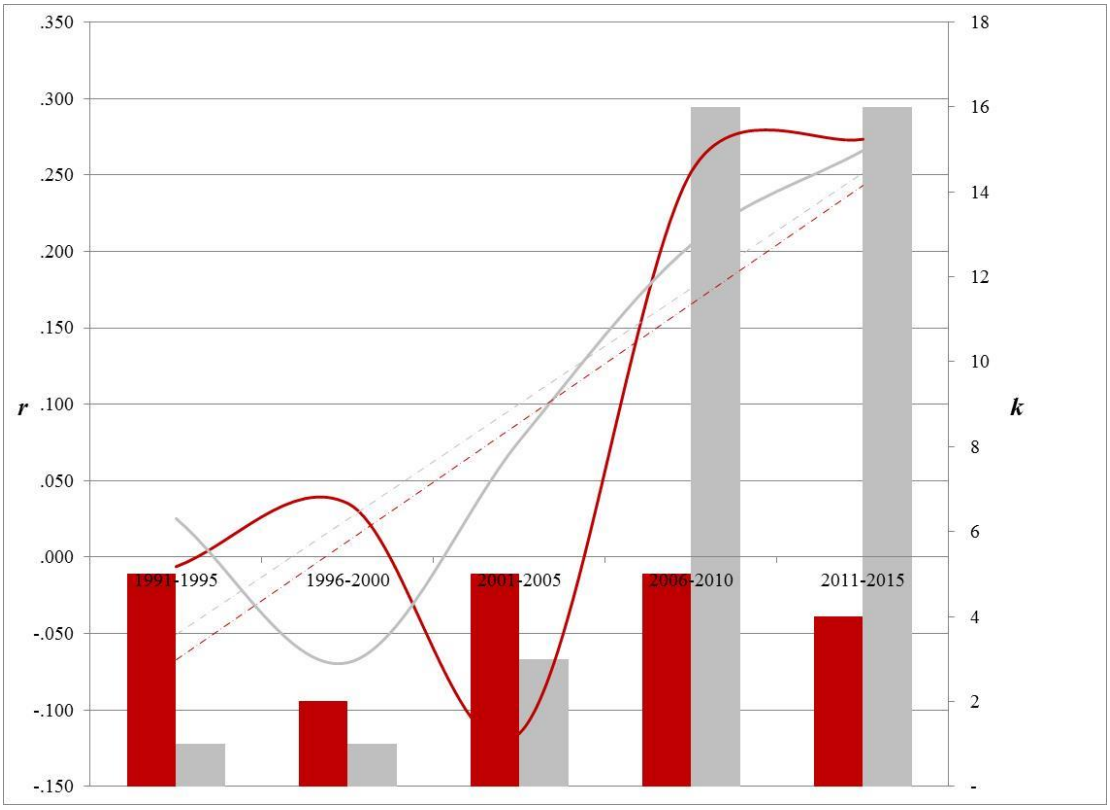

Figure 3. Agreeableness as a Predictor of Effectiveness (r) and Number of Data Sets (k) for Anglo and non-Anglo Cultures, and Corresponding Linear Trend Lines. Lines represent r and bars represents k.
Notes: Red is Anglo. Grey is non-Anglo. Dotted lines reflect linear trends in corresponding colors.

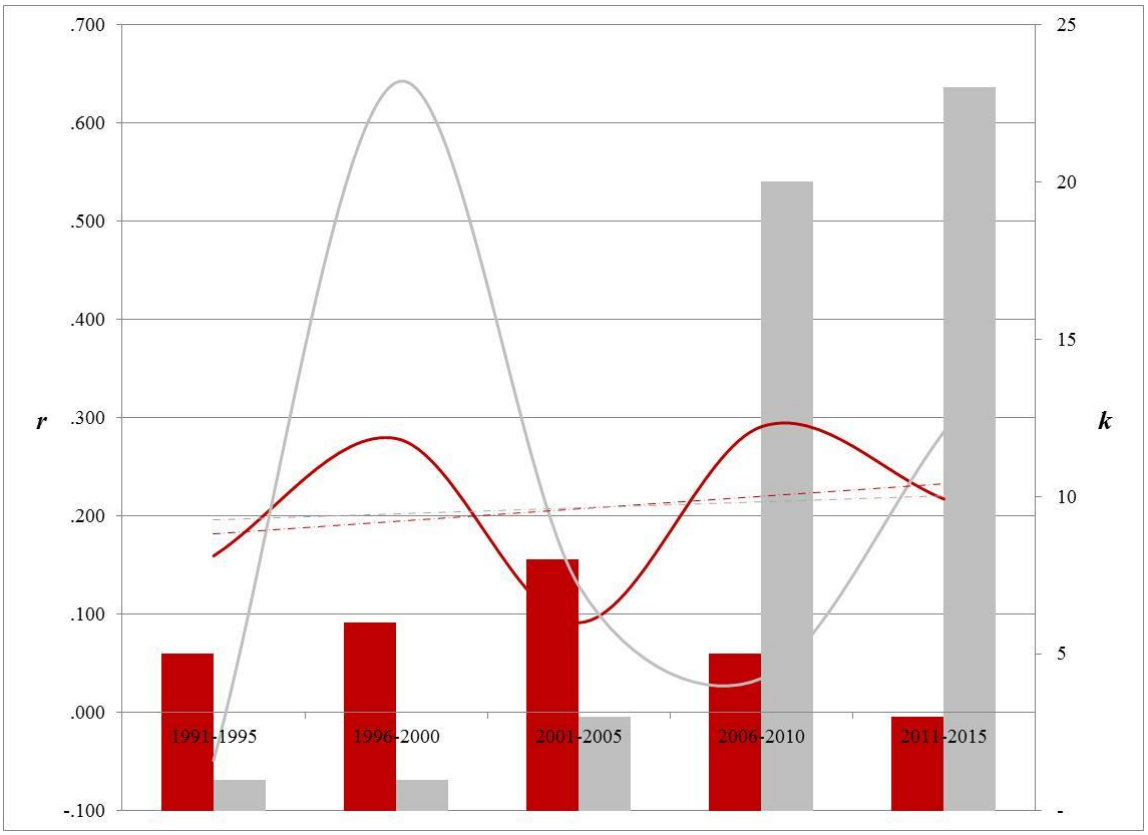

Figure 4. Conscientiousness as a Predictor of Effectiveness (r) and Number of Data Sets (k) for Anglo an non-Anglo Cultures, and Corresponding Linear Trend Lines. Lines represent r and bars represents k.
Notes: Red is Anglo. Grey is non-Anglo. Dotted lines reflect linear trends in corresponding colors.

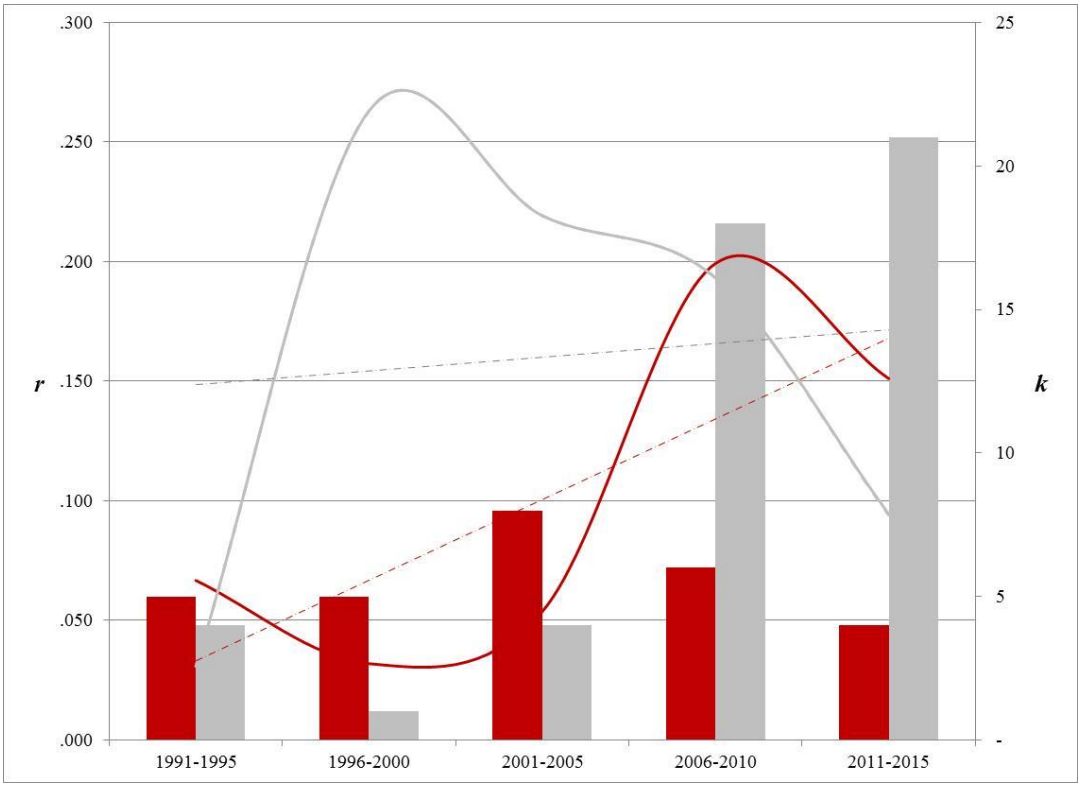

Figure 5. Extraversion as a Predictor of Effectiveness (r) and Number of Data Sets (k) for Anglo an non-Anglo Cultures, and Corresponding Linear Trend Lines. Lines represent r and bars represents k.
Notes: Red is Anglo. Grey is non-Anglo. Dotted lines reflect linear trends in corresponding colors.

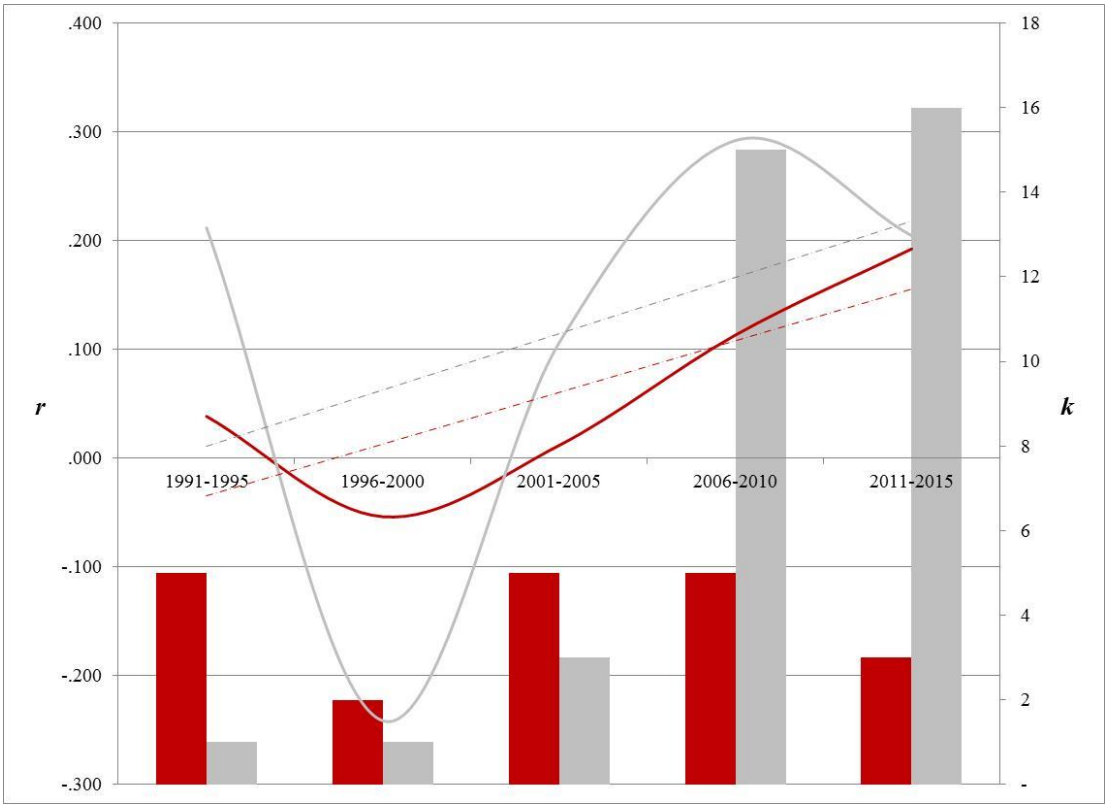

Figure 6. Openness as a Predictor of Effectiveness (r) and Number of Data Sets (k) for Anglo an non-Anglo Cultures, and Corresponding Linear Trend Lines. Lines represent r and bars represents k.
Notes: Red is Anglo. Grey is non-Anglo. Dotted lines reflect linear trends in corresponding colors.

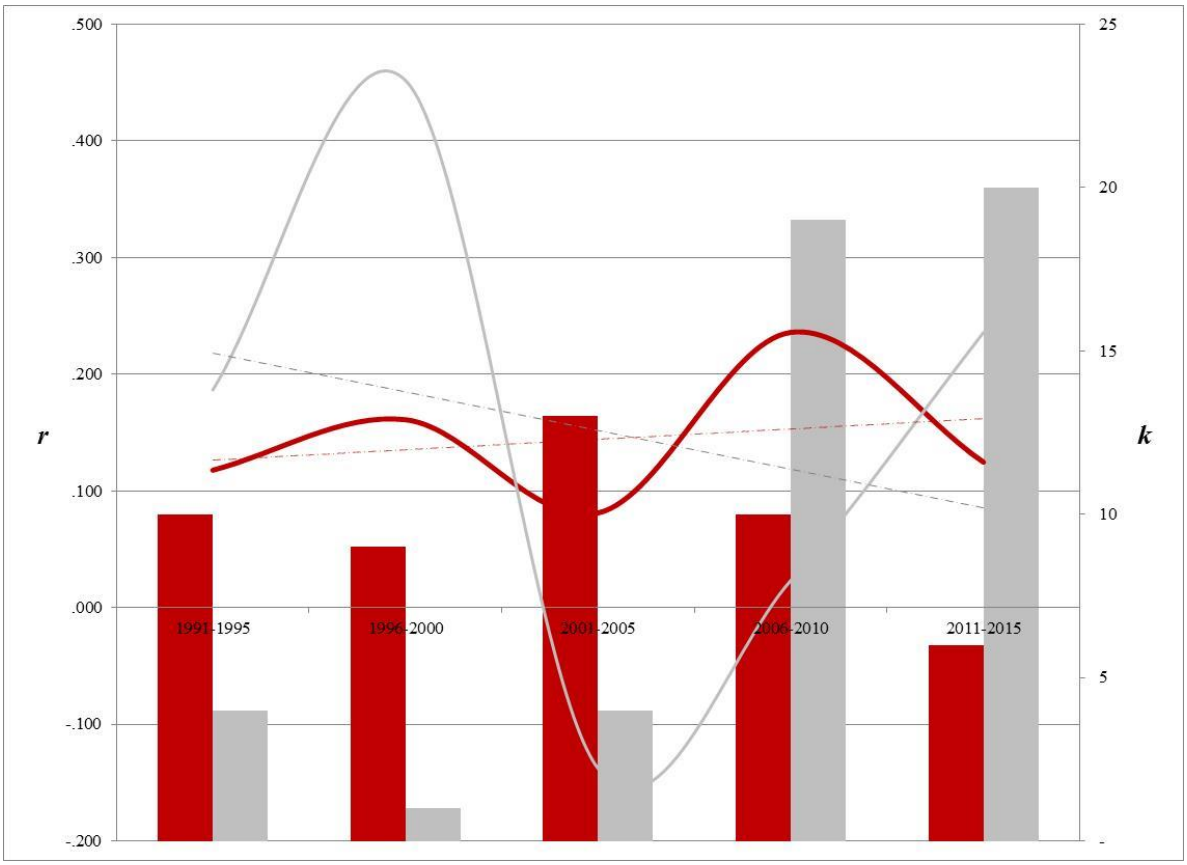

Figure 7. Stability as a Predictor of Effectiveness (r) and Number of Data Sets (k) for Anglo and non-Anglo Cultures, and Corresponding Linear Trend Lines. Lines represent r and bars represents k.
Notes: Red is Anglo. Grey is non-Anglo. Dotted lines reflect linear trends in corresponding colors.

Appendix B. Tables

Table 1

Summary of Findings – FFM Traits as Predictors of Overall Leadership Effectiveness

					95% Confidence Interval	
	k	N	r	X^2	Low	High
Overall	**383**	**89,757**	**.157**	**7,098**	**.129**	**.185**
Agreeableness	64	16,281	.182	915	.036	.190
Conscientiousness	77	18,387	.197	1,089	.143	.251
Extraversion	96	21,332	.128	968	.090	.168
Openness	58	15,332	.184	810	.125	.243
Stability	88	18,425	.107	1,014	.058	.156

Table 2

Sample Affiliation as a Moderator of Overall Personality as Predictor of Effectiveness

					95% Confidence Interval	
	k	N	r	X^2	Low	High
Agreeableness	**64**	**16,281**	**.182**	**915**	**.036**	**.190**
Organizational	52	9,614	.121	363	.068	.174
Military	12	6,667	.270	530	.110	.430
Conscientiousness	**77**	**18,387**	**.197**	**1,089**	**.143**	**.251**
Organizational	64	12,083	.203	824	.139	.267
Military	13	6,304	.185	429	.043	.327
Extraversion	**96**	**21,332**	**.128**	**968**	**.090**	**.168**
Organizational	80	13,052	.129	411	.090	.168
Military	16	8,280	.125	557	-.002	.252
Openness	**58**	**15,332**	**.184**	**810**	**.125**	**.243**
Organizational	46	8,605	.140	369	.080	.200
Military	12	6,727	.240	403	.101	.379
Stability	**88**	**18,425**	**.107**	**1,014**	**.058**	**.156**
Organizational	73	11,871	.137	594	.086	.188
Military	15	6,554	.053	520	-.090	.196

Table 3

Leader Level as a Moderator of Overall Personality as Predictor of Effectiveness

					95% Confidence Interval	
	k	N	r	χ^2	Low	High
Agreeableness	**64**	**16,281**	**.182**	**915**	**.036**	**.190**
Top Leader	5	849	.211	26	.057	.365
Manager	29	7,218	.268	571	.166	.370
Employee-level	28	8,028	.105	204	.046	.164
Group	2	186	.010	5	-.212	.232
Conscientiousness	**77**	**18,387**	**.197**	**1,089**	**.143**	**.251**
Top Leader	7	792	.066	64	-.144	.276
Manager	32	7,651	.252	506	.163	.341
Employee-level	37	9,876	.167	464	.097	.237
Group	1	68	-.179	N/A	N/A	N/A
Extraversion	**96**	**21,332**	**.128**	**968**	**.090**	**.168**
Top Leader	12	1,481	.148	91	.007	.289
Manager	43	10,319	.158	576	.087	.229
Employee-level	39	9,346	.095	272	.041	.149
Group	2	186	-.059	3	-.223	.105
Openness	**58**	**15,332**	**.184**	**810**	**.125**	**.243**
Top Leader	4	641	.332	30	.121	.543
Manager	27	6,899	.267	481	.167	.367
Employee-level	26	7,724	.100	176	.042	.158
Group	1	68	-.129	N/A	N/A	N/A
Stability	**88**	**18,425**	**.107**	**1,014**	**.058**	**.156**
Top Leader	8	1,212	-.076	91	-.266	.114
Manager	40	7,848	.183	394	.114	.252
Employee-level	39	9, 297	.071	414	.005	.137
Group	1	68	-.408	N/A	N/A	N/A

Table 4

Summary of Findings – Cross-Cultural Analysis – all Traits

					95% Confidence Interval	
	k	N	r	X^2	Low	High
Anglo	153	27,995	.112	3,122	.079	.145
Germanic	65	13,673	.029	588	-.021	.079
Latin European	24	2,770	.131	139	.041	.221
African	N/A	N/A	N/A	N/A	N/A	N/A
Eastern European	3	315	.092	25	- .229	.413
Middle Eastern	13	4,853	.468	456	.301	.635
Confucian	53	14,227	.159	395	.114	.204
Southeast Asian	29	8,427	.218	327	.146	.290
Latin American	16	7,539	.318	484	.194	.442
Nordic	17	7,248	.113	211	.032	.194

Table 5

Analysis of Variance– Cross-Cultural[1] Analysis – all Traits

	df	*SS*	*MS*	*F*
Overall				
Between Groups	7	992.64	141.81	3,128.30*
Within Groups	86,724	3,931.18	.045	
Total	86,731	4,923.82		

[1]Anglo, Germanic, Latin European, Middle Eastern, Confucian, Southeast Asian, Latin American, and Nordic cultures included in ANOVA, *$p < .05$

Table 6.
Summary of Findings – Cross-Cultural Analysis – by Trait

	k	N	r	X^2	95% Confidence Low	95% Confidence High
Agreeableness						
Anglo	25	4,796	.113	186	.036	.190
Germanic	12	2,724	.042	53	-.037	.121
Latin European	3	345	-.111	4	-.238	.016
African	N/A	N/A	N/A	N/A	N/A	N/A
Eastern European	1	105	-.313	N/A	N/A	N/A
Middle Eastern	3	1,415	.585	67	.339	.831
Confucian	8	2,089	.094	19	.029	.159
Southeast Asian	5	1,625	.247	13	.170	.324
Latin American	2	1,428	.512	16	.364	.660
Nordic	3	1,212	.095	5	.021	.169
Conscientiousness						
Anglo	27	5,111	.208	291	.118	.298
Germanic	14	2,820	.017	116	-.089	.123
Latin European	3	345	.215	35	-.144	.574
African	N/A	N/A	N/A	N/A	N/A	N/A
Eastern European	1	105	.265	N/A	N/A	N/A
Middle Eastern	2	304	.043	1	-.016	.102
Confucian	14	4,063	.214	42	.161	.267
Southeast Asian	6	1,730	.345	115	.139	.551
Latin American	4	1,561	.490	47	.319	.661
Nordic	4	1,806	.029	112	-.215	.273
Extraversion						
Anglo	45	7,764	.092	198	.045	.139
Germanic	13	2,722	-.016	140	-.139	.107
Latin European	7	740	.190	34	.031	.349
African	N/A	N/A	N/A	N/A	N/A	N/A
Eastern European	1	105	.324	.00	.324	.324
Middle Eastern	3	1,415	.455	107	.144	.766
Confucian	11	2,947	.226	72	.133	.319
Southeast Asian	6	1,730	.171	28	.069	.273
Latin American	4	1,561	-.070	37	-.221	.081
Nordic	4	1,806	.143	15	.054	.232

	k	N	r	X^2	95% Confidence Low	High
Openness						
Anglo	20	4,130	.072	186	-.021	.165
Germanic	11	2,456	.100	56	.011	.189
Latin European	4	600	.122	21	-.060	.304
African	N/A	N/A	N/A	N/A	N/A	N/A
Eastern European	N/A	N/A	N/A	N/A	N/A	N/A
Middle Eastern	3	1,415	.543	145	.181	.905
Confucian	8	2,089	.138	20	.070	.206
Southeast Asian	5	1,460	.230	31	.102	.358
Latin American	2	1,428	.340	.067	.331	.349
Nordic	3	1,212	.131	34	-.060	.322
Stability						
Anglo	36	6,194	.081	310	.008	.154
Germanic	15	2,951	.009	199	-.123	.141
Latin European	7	740	.151	20	.031	.271
African	N/A	N/A	N/A	N/A	N/A	N/A
Eastern European	N/A	N/A	N/A	N/A	N/A	N/A
Middle Eastern	2	304	.055	4	-.104	.214
Confucian	12	3,039	.080	188	-.061	.221
Southeast Asian	7	1,882	.108	85	-.050	.266
Latin American	4	1,561	.337	46	.169	.505
Nordic	3	1,212	.192	22	.038	.346

Table 7

Analysis of Variance – Anglo, Germanic, and Confucian Clusters, by Personality Trait

	df	*SS*	*MS*	*F*
Agreeableness				
Between Groups	2	8.83	4.42	159.66*
Within Groups	9,606	265.69	.03	
Total	9,608	274.52		
Conscientiousness				
Between Groups	2	80.97	40.49	1,042.40*
Within Groups	11,991	465.29	.04	
Total	11,993	546.26		
Extraversion				
Between Groups	2	83.91	41.96	1,292.26*
Within Groups	13,430	436.03	.03	
Total	13,432	519.94		
Openness				
Between Groups	2	6.10	3.05	96.10*
Within Groups	8,672	275.37	.03	
Total	8,674	281.47		
Stability				98.06*
Between Groups	2	11.49	5.75	
Within Groups	12,181	713.63	.06	
Total	12,183	725.12		

*$p < .05$

Table 8

Summary of Findings – Time & Personality as Predictors of Leadership Effectiveness

	Date Range	k	N	r
OVERALL	**1944 - 2016**	**383**	**89,757**	**.163[ab]**
Anglo	1944 – 2016	153	27,995	.122[a]
Anglo[c]	*1993 - 2016*	*113*	*22,384*	*.231[ab]*
Germanic	1993 – 2014	65	13,673	.317[ab]
Confucian	2001 - 2016	53	14,227	.367[ab]
Agreeableness	**1952 - 2016**	**64**	**16,281**	**.262[ab]**
Anglo	1952 - 2016	25	4,796	.238[a]
Germanic	2005 - 2014	12	2,724	.581[ab]
Confucian	2001 - 2015	8	2,089	.032[a]
Conscientiousness	**1992 - 2015**	**77**	**18,378**	**.171[a]**
Anglo	1992 - 2013	27	5,111	.176[a]
Germanic	2005 - 2015	14	2,829	.769[ab]
Confucian	2001 - 2015	14	4,063	.479[ab]
Extraversion	**1944 - 2015**	**96**	**21,332**	**.181[ab]**
Anglo	1944 - 2013	45	7,764	.182[a]
Germanic	1993 - 2014	14	2,722	.145[a]
Confucian	2001 - 2015	11	2,947	-.300[a]
Openness	**1992 - 2015**	**58**	**15,332**	**.262[ab]**
Anglo	1992 - 2013	20	4,130	.335[a]
Germanic	2005 - 2014	11	2,456	.277[a]
Confucian	2001 - 2015	8	2,089	.383[a]
Stability	**1944 - 2016**	**88**	**18,425**	**.182[ab]**
Anglo	1944 - 2013	36	6,194	.02
Germanic	1993 - 2014	17	2,951	.147[a]
Confucian	2001 - 2016	12	3,039	.801[ab]

[a]Indicates $p < .05$ using N, [b]Indicates $p < .05$ using k, [c]Reduced date range to match other cultural subsets.

Table 9

Summary of Number of Data Points, Sample Size, Average Corrected r, and 95% Confidence Interval by Time Period

	k	*N*	*r*	χ^2	95% Confidence Low	95% Confidence High
Overall						
Pre - 1970	31	4,130	.076	168.44	.005	.15
1971 - 1990	6	916	.101	4.56	.045	.16
1991 - 2000	59	8,444	.088	413.83	.032	.14
2001 - 2010	167	41,006	.135	2,658.66	.096	.17
2011 - 2015	120	35,261	.211	1,475.91	.174	.25

Table 10

Analysis of Variance - Differences between Categorical Time Groups

	df	*SS*	*MS*	*F*
Overall				
Between Groups	4	192.84	48.21	902.11*
Within Groups	89,752	4,796.48	.05	
Total	89,756	4,989.32		
Agreeableness				
Between Groups	3	86.72	28.91	560.05*
Within Groups	16,277	840.08	.05	
Total	16,280	926.79		
Conscientiousness				
Between Groups	2	136.22	68.11	1291.38*
Within Groups	18,384	969.59	.05	
Total	18,386	1,105.81		
Extraversion				
Between Groups	4	54.10	13.52	380.95*
Within Groups	26,722	948.68	.04	
Total	26,726	1,002.78		
Openness				
Between Groups	2	59.28	29.64	596.81*
Within Groups	15,329	761.36	.05	
Total	15,331	820.65		
Stability				
Between Groups	4	118.31	9.58	595.42*
Within Groups	18,420	915.02	0.05	
Total	18,424	1,033.33		

*$p < .05$

Table 11

Results Compared to Previous Meta-Analyses

	Current Study	Prior Research Findings			
Trait Sample Composition	*r*	1	2	3	4
Agreeableness					
Organizational, Military & Students	N/A	.08[b]	N/A	.21[a]	N/A
Organizational & Military	.182[a]	N/A	N/A	.000	N/A
Organizational	.121[a]	N/A	N/A	-.04	.07[c]
Government/Military	.270[a]	N/A	N/A	-.04	N/A
Students	N/A	N/A	N/A	.18[a]	N/A
Conscientiousness					
Organizational, Military & Students	N/A	.28[b]	.16[a]	.16[a]	N/A
Organizational & Military	.197[a]	N/A	N/A	N/A	N/A
Organizational	.203[a]	N/A	.14[a]	.05	.22[c]
Government/Military	.185[a]	N/A	.18[a]	.17[a]	N/A
Students	N/A	N/A	N/A	.36[a]	N/A
Extraversion					
Organizational, Military & Students	N/A	.31[b]	.15[a]	.24[a]	N/A
Organizational & Military	.129[a]	N/A	N/A	N/A	N/A
Organizational	.130[a]	N/A	.21[a]	.25[a]	.13[c]
Government/Military	.125[b]	N/A	.15[a]	.16[a]	N/A
Students	N/A	N/A	N/A	.40[a]	N/A
Openness					
Organizational, Military & Students	N/A	.24[b]	N/A	.24[a]	N/A
Organizational & Military	.184[a]	N/A	N/A	N/A	N/A
Organizational	.140[a]	N/A	N/A	.23[a]	.04[c]
Government/Military	.240[a]	N/A	N/A	.06[a]	N/A
Students	N/A	N/A	N/A	.28[a]	N/A
Stability					
Organizational, Military & Students	N/A	.24[b]	.12[a]	.22[a]	N/A
Organizational & Military	.107[a]	N/A	N/A	N/A	N/A
Organizational	.137[a]	N/A	.07[a]	.15[a]	.08[c]
Government/Military	.053	N/A	.17[a]	.23[a]	N/A
Students	N/A	N/A	N/A	.27[a]	N/A

[1]DeRue, et al (2011), p. 25, [2]Hoffman, et al (2011), p.360, [3]Judge, et al (2002), pp. 772-773, [4]Barrick & Mount (1991), p. 13 [a]CI at 95%, [b]CI at 90%, [c]CI not provided

Appendix C. Descriptive Information on Studies included in Analysis

NOTE: The majority of the studies covered a larger scope than described. This serves to summarize the meta-analysis relevant portion only.

Alonso & Fernandez (1979) - This paper is written in Spanish. The authors investigated measure validity in a validity of tests in the prevention of work accidents. Personality measures of Neuroticism (Neurotiamo) and Extraversion (Extraversi6n) were tested variables self-reported by 80 Spanish machine workers using the EPQ (translated from: "Un cueattonarto de personalidad: el EPI de Eysenck, con las escalas de Neurotiamo (N), Extraversi6n (E) y Sincerldad (8)" p. 714). Performance outcomes were compiled by comparing employee with and without accidents.

Alkahtani, Abu-Jarad, Sulaiman, & Nikbin (2011).– The authors researched the influence of personality on leadership in 105 Malaysian managers. Leading change, a factor of self-reported responses, was included as the effectiveness measure.

Aronson, Reilly, & Lynn (2006) – The authors evaluated product success in terms of team leader personality through the self-reported responses from 143 U.S. managers using a five item measure of the Big Five and the evaluation of product success through 6 items predominantly measuring economic performance versus plan.

Bakker-Pieper & De Vries (2013) –Overall, the researchers sought to compare personality and communication styles as predictors of leader outcomes. Using the HEXACO-PI-R, noted as cross-culturally replicable, they measured the personality leaders through the observation of 120 Dutch employees. The employees also provided observed assessment of their managers' performance as well as their degree of satisfaction with their leader. While not explicitly stated, the assumption is that most, if not all, the sample is Dutch because the authors' affiliations are with universities in the Netherlands and the HEXACO-PI-R was distributed using the Dutch language.

Bakker, van der Zee., Lewig, & Dollard (2006) - These authors researched, among other variables, the effects of personality (BFPI) on burnout in 80 Dutch volunteer counselors. The burnout measure selected for this meta-analysis to reflect job satisfaction was personal accomplishment.

Barrick & Mount (1993) – This study investigated autonomy as a moderator for self-reported personality using the PCI measure and manager assessed leadership in 146 US civilian managers employed by the military, thus, coded as military.

Barrick, Mount, & Strauss (1993) – Personality, as self-reported via the PCI, of 91 US sales representatives, was evaluated as a predictor of multiple measures including job performance. Performance metrics incorporated in this meta-analysis include manager appraisal and sales volume.

Bartone, Eid, Johnsen, Laberg, & Snook (2009) – These authors research personality, among other variables, as predictors of leader performance in over 800 US West Point military cadets. Leader effectiveness is assessed by three supervising officers. Personality was self-reported using an analog item equivalent of the NEO-PI.

Bass, Wurster, Doll & Glair (1953) – These authors asked 140 sorority sisters in the U.S.A. to self-report personality via the Guilford Series and self-report leadership positions held to evaluate personality as a predictor of leadership. In the meta-analysis, emotional stability vs. emotional instability, friendliness, agreeableness vs. hostility, and sociability vs. shyness were used as proxies for Stability, Agreeableness, and Extraversion in the FFM.

Bauer, Erdogan, Liden, & Wayne (2006) – This study examined the moderating role of Extraversion in 67 U.S. top executives self-reporting traits and manager performance appraisals.

Benoliel (2014) – This author investigated the effects of personality on multiple variables, including in role job performance as assessed by one's supervisor. In total, 153 Israeli schoolteachers self-reported personality using the NEO-FFI.

Bergman, Lornudd, Sjöberg, & Von Thiele Schwarz (2014) – These authors examined 589 Swedish health care managers' performance through manager ratings on ideas for change, productivity, and employee regard for others using the UPP to measure personality and CPE to measure performance.

Bergner, Neubauer, & Kreuzthaler (2010) – The authors examined the effects of personality on job success in a sample of 130 managers from a variety of industries. The sample was treated as Germanic given the authors' affiliation to an Austrian university and the personality test provided in German. Personality traits, self-reported using the NEO-FFI, were correlated with a number of outcomes including, income, job satisfaction, and task performance.

Blanco & Salgado (1992) – This article is written in Spanish. The authors ultimate objective is to look at selection measures for recruitment of professional drivers using a sample of 30 professional drivers in Spain. Participants self-reported personality using the EPI. Introversion (Introversión) and Neuroticism (Neuroticismo) measures were compared to a judge's overall work assessment (valoracion global del ocupante) (performance appraisal).

Blickle, Meurs, Zettler, Solga, Noethen, Kramer, & Ferris (2008) – The present study looked at the effect of Agreeableness and Conscientiousness, using the BFI-K, in 326 German employees, on multiple role evaluators of performance.

Blickle, Momm, Schneider, Gansen, & Kramer (2009) – Study 1 compared a control and experimental group of 54 and 41 German employees' conscientiousness as a predictor of other-assessed performance, respectively. Conscientiousness was self-reported using the BFI-K; under the context of securing a desired position in the experimental group. Employees were employed at current organization long enough to have a reputation built up.

Blickle, Wendel, & Ferris (2010) – The authors studied the personality of 112 German car salespeople as predictors of performance using the German version of the NEO-FFI and comparing against sales performance, an economic benchmark.

Boyatzis, Good, & Massa (2012) – Using a sample of 60 US top managers, Divisional Executives, the authors tested, among other relationships, personality as a predictor of sales leadership performance. Participants self-reported personality on the NEO-PI-R. The authors indicate economic success is operationalized as recruitment.

Bradley, Nicol, Charbonneau, & Meyer (2002) – These authors studied the relationship between personality and leadership development in Canadian Force Officer Candidates. Personality was measured using the Canadian adaptation of ABLE, along with interview assessments and reference confirmation. This meta-analysis leveraged the table correlating ABLE results with BOTC final grade as a performance outcome as it represents a collection of judgments.

Bruce (1953) – In this study, the effectiveness of 107 U.S. factory foremen was evaluated by comparing self-reported responses to the Bernrueter Personality Inventory to combined, observance-based performance appraisals completed by Personnel and two Superordinate Managers. In the meta-analysis, neurotic and sociability variables were used as substitutes for Stability and Extraversion in the FFM.

Burbeck, E. & Furnham, A. (1984). This study investigate personality as a predictor of job selection for 319 British police force (coded as military), using self-reported personality from the EPQ, and comparing against selected versus rejected candidates.

Campbell, Prien, & Brailey (1960) – The purpose of this study was to understand traits as predictors of job performance in 95 US employees through self-reported personality (GPP) and supervisor ratings.

Cavazotte, Moreno, & Hickmann (2012) – A sample of 134 mid-level Managers of a Brazilian energy company self-reported personality using Goldberg's 1999 five factor scale for comparison relative to their most recent workplace annual performance appraisal completed based on observations by their respective bosses.

Chen (2013) – In this study university professors' self-reported Stability using the NEO-PI was correlated with self-reported innovation interactions with the author's ultimate objective being identifying the moderating role of visionary leadership.

Chi, Tsai, & Tseng (2013) – The purpose of this study was to research the relationship between employee hostility, personality, and group affect. In total, 61 Taiwanese hair salon managers rated subordinate stylists for service sabotage, a negative follower behavior. The managers self-reported personality traits of Extraversion and Stability using the MM.S.

Cortina, Doherty, Schmitt, Kaufman, Smith (1992) - These authors evaluated the MMPI and IPI personality measures as a predictor of US police performance and job satisfaction, among other

measures, in 300+ employees. For the purpose of this analysis, the MMPI was compared to peer evaluation.

De Hoogh & Den Hartog (2009) – The authors' primary objective was investigating the moderating role of personality traits between leader behavior and burnout. The sample consisted of 91 Netherlands employees from a variety of companies leveraging the services of a coaching/training firm. Neuroticism was self-reported through the G10.IPIP and burnout (lack of performance).

DeHoogh, Den Hartog, & Koopman (2005) – This investigation studied relationships between personality, effectiveness, and moderating styles of 83 Dutch managers using the NEO-PI-R and manager and/or peer review, respectively.

De Jong, Song, & Song (2013) – The authors researched the founder (top manager/owner) personality of 369 new ventures in the US using the NEO-FFI and its predictive value against business performance. Gross margin was used as the economic outcome measuring business performance effectiveness.

Doucet, Shao, Wang, & Oldham (2016) – This paper evaluated agreeableness, emotional recognition, cognitive ability, and service performance. For the purpose of this meta-analysis, the self-reported Agreeableness (NEO-FFI) of 70 US retail bank call center representatives was compared to service performance outcomes as measured by the quality control department.

Farrington (2012) – The author ultimately desired to look at personality as a predictor of small business success. Using the BFI (version not provided), 383 South African small business owners self-reported personality. Since the clustering framework specifies South African is group by race of sample, this study was not used in any cultural analysis. The effectiveness criteria selected for this paper was financial performance, a combination of profit, financial security, and overall successfullness.

García-Izquierdo, A.L., García-Izquierdo, M., y Ramos-Villagrasa, P.J. (2007) – This study is written in Spanish and includes an English language abstract. The primary study objective was comparing emotional intelligence to big five personality as predictors of performance in the job selection process. Participants, self-reporting personality using the NEO-PI-R, consisted of 130 experienced Spanish workers from a variety of professions in the job selection process. The outcome measure selected for role comparison was leadership positions held (cargos de responsibilidad).

Greenwood, J. M., & McNamara, W. J. (1969). These authors researched the relationship between personality and consideration and structure in a U.S. professional sample. Structure equates to the leader's performance. From this study, 296 leader personality, measured via the GPP, was correlated with performance.

Grotzinger (1959) – This Master's thesis investigated 52 US military instructors' personality as a predictor of officer candidates' performance in military basic training. Participants self-reported personality via the GPP.

Guay, Oh, Choi, Mitchell, Mount, & Shin (2013) – The paper investigates Conscientiousness and Agreeableness, both measured on the G10.IPIP, as predictors of job performance in a sample of 113 South Korean bank employees. Two measures of effectiveness, manager-rated task performance and self-rated citizenship behaviors, are employed as outcomes.

Guilford (1952) – Self-reported trait information from 208 top executives and 143 supervisors from the U.S. was collected using the Guilford Series and compared to observer-based performance ratings from two outside agency trainers and two managers ranking higher than the supervisors and lower than the executives for the executives and supervisors, respectively.

Hanawalt & Richardson (1944). These authors compared US adult leaders and non-leaders in terms of personality using the BPI.

Harrell (1960) – This paper investigated the relationship between and sales performance in 21 US salespersons. The participants self-reported personality via the BPI and sales performance leveraged historical sales data. The high and low performing salespersons were compared.

Hendler (1999) – This dissertation investigate the relationship between Extraversion and Conscientiousness of NFL owners and coaches and football team performance outcomes equivalent to win percent, post-season success and margin of victory.

Hinrichs (1969) – Some 47 U.S. marketing employees, some managers, some non-managers, participated in a management training program to evaluate management potential. Participants self-reported personality using the Gordon Personal Profile and effectiveness was measured using salary (economic) and two experienced managers' observance-based performance appraisal through an assessment of potential promotion.

Ho & Nesbit (2014) – The goal of this study was investigating the moderating role of autonomy, or self-leadership, and performance with a sample of 407 Chinese supervisor-subordinate dyads; Conscientiousness was considered a control variable. Conscientiousness was self-reported on the BFI. Manager performance appraisal was included in this meta-analysis.

Hofmann and Jones (2005). The authors used an observation-based FFM assessment to evaluate the collective personalities of 68 US pizza stores and multiple outcomes. Store profit was chosen as the economic measure of success.

Hollanda (2014) – This dissertation is written in Portuguese and includes an English abstract. The purpose of the study is to evaluate personality as a predictor of job performance using a large sample (1,294) of superintendents from a large, Brazilian, public security organization (believed to be federal police). Translation of Openness, Extraversion, Neuroticism, Conscientiousness, and Agreeableness to Portuguese in this paper is Abertura à experiências, Extroversão, Neuroticismo, Conscienciosidade, and Amabilidade, respectively. The self-reported performance appraisal (auto-gerenciamento do Desempenho) was selected as the effectiveness variable. Given the length of a dissertation, a search was done for "alfa" (Portuguese for alpha) and "fiabilidades" (Portuguese for reliabilities) but none were found.

However, they may be present in the paper and this researcher cannot find them due to language limitations.

Hui, Pak, & Cheng (2009) – These authors investigated the relationship between personality and self-reported management ability in a large sample of employees, subdivided into three groups. The second and third groups were used in this study. The second group was coded as managers, and included 145 Chinese supervisors and salespersons. The third group included 112 Taiwanese engineers, coded as employees.

Hunter, Neubert, Perry, Witt, Penney, & Weinberger. (2012) - Information used from this study is at the store level (118 stores). US retail regional managers were assessed by measuring personality traits of Agreeableness and Extraversion, using the G10.IPIP, as a function of store sales performance.

Hülsheger, Specht & Spinath (2006) – This paper is written in German and includes an English abstract. The primary purpose was to compare the validity of the BIP and NEO-PI-R measures as well as their predictability for objective and subjective career success. The sample included 90 professionals working at least 21 hours a week (translated from: "Die Stichprobe setze sich aus 90 Berufstätigen zusammen, die mindestens 21 Stunden pro Worche arbeiteten" (p. 138)).The sample is assumed to be German/Germanic because of the authors' affiliations, language of the article and language of the test measures provided to participants. The NEO-PI-R measures, Neuroticism, Extraversion, Opennes, Agreeableness (directly translated as Compatability), and Conscientiousness, were translated from Neurotizismus, Extraversion, Offenheit für Erfahrungen, Verträglichkeit , and Gewissenhaftigkeit, respectively. The economic measure of effectiveness selected was gross income (bruttoeinkommens).

Idzikowski & Baddeley (1987) – This research studied the relationship between personality and jump performance in 114 novice parachutists. The parachutists were presumed to be English due to the location of the authors and location of the jump club facility. Personality was self-reported using the EPQ and jump performance rated by instructors.

Jabeen, Cherian & Pech (2012) – The authors evaluated the effectiveness of 152 Indian expatriates employed in the United Arab Emirates. MMPI was employed to self-report personality; stability was included in this study. While the authors provided a scale for leadership effectiveness, correlation was not available. However, income was correlated with personality and used as an economic measure of success.

Johnson & Hill (2009) – This paper analyzes the personality characteristics of effective versus ineffective leaders using a sample of 57 US military officers.

Judge & Bono (2000) – A sample of 107 managers/leaders from the U.S.A. self-reported personality using the NEO Personality Inventory – Revised (NEO-PI-R; Costa & McCrae, 1992), provided two subordinate, observation-based reports on satisfaction with leader (three items from the Job Diagnostic Survey; Hackman & Oldham, 1980), two subordinate, observation-based reports on job satisfaction (five items from the Brayfield-Rothe measure of overall job

satisfaction; Brayfield & Rothe, 1951), and their supervisor's observation-based responses to five Likert questions on the manager's leadership performance.

Judge, Ilies, & Zhang (2012) – Using 584 Swedish twins, the authors analyzed multiple variables including personality traits of conscientiousness and extraversion and outcomes of job satisfaction and self-evaluation. Self-evaluation is considered self performance appraisal. "Conscientiousness and extraversion were measured with 14- and 17-item scales, respectively, obtained in 1984" (p. 212).

Kell, Rittmayer, Crook, & Motowidlo (2010) – Using a US sample of 100 volunteer and 97 professional service professionals, the authors investigated how situations moderate the predictability of personality on effectiveness. An abbreviated measure of the BFI (by: Gosling, Rentfrow, and Swan, 2003) was used to self-report personality. Effectiveness was rated through a series of people.

Klang (2012) – This study investigated the effects of personality on job performance in 34 Swedish telephone sales representatives. Participants self-reported personality via the NEO-PI-3 and managers provided performance assessments.

Lai, J. Y. M., Lam, S. S. K., & Chow, C. W. C. (2015) – Ultimately the authors wanted to understand the effects of supervisor-subordinate personality likeness and organizational citizenship behaviors in a sample of 403 customer service professionals from China. Both supervisors and subordinates self-reported personality and managers' reported organizational citizenship behaviors. This correlation was used in the meta-analysis. OCB-I and OCB-O (interpersonal and objective) scores were averaged. Kuder-Richardson reliability was reported for personality rather than Cronbach's alpha.

Lazaridou & Beka (2014) – This paper studied personality and resiliency in 105 Greek school principals. Personality was self-reported via the BFI. The author only reported a few correlations between three personality traits and sub-items within resilience. Where more than one item was provided, it was averaged for the purpose of this study.

Lent & Schwartz (2012) – These authors researched, among other variables, the effects of personality (G10.IPIP) on burnout in 340 US professional counselors. Personal accomplishment was used to reflect self-appraisal. The *t* scores reported were converted to r using the formula: $r = t/(\sqrt{(t^2 + (n - 2))}$

Li & Ahlstrom (2016) – The authors were studying the construct of emotional stability. In Study 2, 192 Chinese employees provided 360 reviews and self-reported personality on the MM.S. Stability was selected in relation to self-reported appraisal of group leadership.

Li, Zhou, Zhao, Zhang, & Zhang (2015) – This paper researched the effects of personality, through a sample of 79 Chinese leaders self-reporting via the BFI-10, on team performance. Team performance was assessed by team leaders. The authors reported a reliability range for the five personality measures of .58 - .65; an average was used given the small range.

Lim & Ployhart (2004) – This research studied personality of 38 Singapore military leaders and their corresponding teams' performance. Self-reported personality was measured using the G10.IPIP and typical conditional team performance was used as the effectiveness outcome. Typical performance included five superiors' ratings and greater interaction with the leader and his/her team.

Lin, Ma, Wang & Wang (2015) – Overall, the authors investigated Conscientiousness as a moderator for work stress, strain and job performance outcomes. Participants consisted of 250 Chinese employees, with a wide range in title and rank, employed at either a restaurant or consulting firm. Personality was self-reported on the MM.S and performance outcomes defined as a manager's review.

Liu, Liu, Mills, Fan (2013) – Overall, the authors investigated Conscientiousness as a moderator for work stress, performance and dedication in a group of 487 police officers from Beijing. Both personality (BFI) and performance were self-reported.

McCormack & Mellor (2002). The authors desired to evaluate personality and leader effectiveness among 99 Australian army officers using the NEO-PI-R and manager assessments.

Matin, Jandaghi, & Ahmadi (2010) –The authors researched personality, leadership, and organizational citizenship behaviors using a sample of 100 employees from an Iranian petrol company. Responses were self-reported and no indication of the personality measure was provided except that is followed the five dimensions.

Meyer & Pressel (1954) – These authors sought to validate the Employee Questionnaire test (E.Q.; Stevenson, Jordan & Harrison psychologists) by collecting and comparing self-reported personality data from 57 U.S. top executives and 100 U.S. managers.

Nadkarni & Herrmann (2010) – This research analyzes CEO personality as a predictor of strategic flexibility and firm performance from 195 Indian firms. Firm performance, the economic measure of effectiveness, was comprised of return on assets, investments, and sales.

Monteiro, Serrano, & Rodriguez (2012) – This study is written in Spanish with a Spanish and English abstract. The authors sought out the effects of personality and negotiation effictiveness (eficacianegociadora), both self-reported, using a convenience sample of 255 Portuguese adults. Personality effects were only reported for Neuroticism, Extraversion, and Openness, translated from, el Neuroticismo, la Extraversión, and la Apertura a la Experiencia, respectively.

Nahaya, Taib, Ismail, Shariff, Yahaya, Boon, & Hashim (2011) – Leveraging a sample of 300 Malaysian managers and respective professional teams, these authors sought out relationships among variables including power style, leadership style, and personality. Leader personality was assessed through the BFPQ which is assumed to be both self- and other-reported as it is not explicitly stated. Expert power, or the power to influence through knowledge and wisdom, is used as the measure of effectiveness.

Ng, Ang, & Chan (2008) – These authors research the mediating effects of multiple variables on personality and leadership effectiveness outcomes. Personality of 394 members of the Singapore military was evaluated through G10.IPIP and leadership effectiveness was the outcome of commander assessment.

Patterson & Mechinda (2011) – In this study, 270 nurses from Thailand hospitals self-reported four personality traits via the MM.S. Personality was investigated in relation to a number of outcome variables including self-reported capability.

Peterson, Smith, Martorana, & Owens (2003) – This research studied the effects of top leader personality on organizational outcomes for 17 US CEOs. CEO personality was assessed by raters through a series of information gathered. CEO personality was correlated with top management team traits. These traits were then correlated with income growth, the measure of effectiveness used in this analysis.

Piedmont. & Weinstein (1994) – This research including 207 - 211 U.S. employees, predominantly sales and customer service professional while also including managers, investigated the relationship between personality and job performance using the NEO-PI and manager ratings, respectively.

Ployhart, Lim, & Chan (2001) – This research collected self-reported personality information from 1259 Singapore military members in basic training using the G10.IPIP as predictors of typical and maximum performance assessed by managing officers.

Renaud (1996) – This author investigated the effects of age and personality on teacher effectiveness using a sample of 33 Canadian university professors. Personality was measured using peer ratings. Teaching effectiveness was aggregated student evaluation data.

Robertson, Baron, Gibbons, MacIver & Nyfield (2000) - This study looked at Conscientiousness and managerial performance in a sample of 453 UK managers from three industries. Participants self-reported personality using the OPQ.CM.4.2 and were evaluated by their managers.

Robertson, Gibbons, Baron, MacIver, & Nyfield,(1999) – In this study of 437 British managers, the authors used the OPQ.CM.4.2 to measure personality against a 360 degree review of multiple management competencies. Factor 4, measuring leadership, was used in relation to personality for this analysis.

Richardson & Hanawalt (1944) – These authors surveyed 238 top executives, comparing 57 office-holders to 116 non-office holders, and 178 supervisors, comparing 90 supervisors to 88 non-supervisors, all from the U.S.A., asking them to self-report responses to the Bernrueter Personality Inventory and then comparing means.

Roma (2006) – This dissertation is written in Portuguese and includes an English abstract. This paper investigated the emotional intelligence and personality of 133 Brazilian entrepreneurs (top management) in predicting performance. The reporting for the sample is split between two industries, service and commercial/industrial. Three personality traits, Conscientiousness,

Stability, and Extraversion (translated from: Consenciosidade, Estabilidade, Extroversão) were self-reported using a measure from the IPIP. Sales per employee was used as the outcome variable (fatpond2). Given the length of a dissertation, a search was done for "alfa" (Portuguese for alpha) and "fiabilidades" (Portuguese for reliabilities) but none were found. However, they may be present in the paper and this researcher cannot find them due to language limitations.

Rothmann & Coetzer (2003) – These authors evaluated the performance of 159 South African pharmaceutical employees using manager reviews via a performance assessment questionnaire and compared with personality using the NEO-PI-R. For this study, it could not be culturally coded as the framework divides South African culture between black and white sample populations.

Salgado & Rumbo (1997) – The NEO-FFI was employed to evaluate personalities of 125 Spanish middle managers against nine, supervisor rated, characteristics of job performance.

Salgado, Rumbo, Santamaria, Losada (1995) – This paper is written in Spanish and includes an English abstract. In a study of 93 Spanish bank managers, the authors compare the 16PF to the transformed FFM in using personality to predict job performance (assessed by multiple supervisors) and job satisfaction

Seibert & Kraimer (2001) – These authors researched personality as a predictor of job success in 496 US employees working across multiple professions and industries. Personality was self-reported using MM.S. Career success was evaluated in terms of intrinsic (job satisfaction) and extrinisic (promotions and salary) markers. The relationship between personality and salary were included in this study.

Strang & Kuhnert (2009) – This study correlated (using kendall's tau) the personalities of 67 Management Executives from the U.S.A. complete the Personality and Leadership Profile (PLP), a self-report measure of personality (Hagberg Consulting Group, 2002), with a 360 degree, observance-based, performance appraisal.

Stewart (1999) – This author evaluates self-reported Conscientiousness (NEO-PI-R) as a predictor of achieving sales goals leveraging a sample of 183 US Sales Representatives.

Sümer, & Sümer (2007) – These authors ultimately sought to identify relationships between traits measured by the TAFPI and mental health. For the purpose of this study, openness, agreeableness, and sociability were correlated with group leadership as self-reported by 1111 Turkish commissioned military officers.

Tay, Ang, & Van Dyne (2006) – Part of this research included investigating the relationship between 229 Singapore accounting graduates' personalities and job offers from CPA firms. Interview success, treated as economic performance, equated to the total number of job offers received by the employees from the CPA firms. The interview candidates self-reported personality via the PCI.

Thomasa, Dickson, & Bliese (2001) - Using the HPI, his study investigated self-reported extraversion as a predictor of human relation leadership performance, measured by commanders, among 818 US ROTC military cadets.

Ülke & Bilgiç (2011) – These researchers sought to identify relationships between self-reported personality via an adapted version of the BFI and social loafing (job ineffectiveness) using 153 Turkish managers and subordinates in the software sector.

Uppal (2014) –The author studied the effects of personality on performance at two time periods. The second time period was used for this meta-analysis. The sample consisted of employees from multiple ranks in multiple banks within India. Employees self-reported personality using the FFM. Performance ratings were obtained from the Human Resources departments.

van Den Berg & Feij (1993) – The authors investigated personality as predictor of job performance with a sample of 181 Dutch job applicants reporting analysis relevant results for between 153-174 candidates. An average, 163, was used in this analysis. The authors used multiple measures of personality with Extraversion and Stability, used in this analysis, measured by the ABV. The performance measure included in this analysis is self-reported, self-appraised job performance.

van Den Berg & Feij (2003) – The authors sampled 161 Dutch employees, including some managers, to investigate the relationship of personality and manager evaluation of job performance. Two personality measures assessed via the ABQ apply to this analysis, stability and extraversion.

van der Linden, Oostrom, Born, Van, & Serlie (2014) –The authors investigated the role of personality as a predictor of social outcomes in a sample including separately 106 Dutch employees self-reporting via the G5R with one outcome being manager and peer evaluation of leadership effectiveness.

van der Linden, te Nijenhuis, Cremers, & van de Ven (2011) – The authors compare six studies to evaluate personality measures and outcomes in Dutch military samples. The authors reported a corrected *r* from van & vos (2006) correlating the NEO-FFI to military drop-out rates interpreted as the inability to perform for adults and adolescents.

> Reference: van Kuijk, P. H. M., & Vos, A. J. V. M. (2006). Relatie persoonlijkheiden opleidingsverloop: Testen bij schoolbataljons CLAS. Lichting 0508 [The relation between personality and training drop-out: Testing at school battallions CLAS. Class of 0508] (No. GW-06- 074). Den Haag, The Netherlands: Ministry of Defense.

van Woerkom & De Reuver (2009) – Overall, these authors investigated manager personality, leadership style, and performance in expatriate managers. Since 75% of the 138 managers in the sample were Dutch, it was assigned to the Germanic cluster. Managers self-reported personality using the MPQ.

Wang, Wu, & Mobley (2013) – These authors evaluated the predictive value of Conscientiousness in managerial effectiveness using 2 samples of employed, Chinese managers from Executive MBA students, self-reporting personality (PWBI) and providing multiple evaluations.

Williams (2004) – This study looks at the effects of openness, measured by the IASR-B5, and peer assessment of creative performance with a sample of 208 US employees.

Witt (2002) – Three US samples, groups 2, 3, and 4, were used from this study evaluating Extraversion and Conscientiousness as predictors of job performance. Sample 1 studied interview performance only which was not the equivalent to the other groups due to company reorganization. Group 2 was comprised of 195 customer service call center representatives self-reporting personality via the OPQ with manager evaluations. Group 3 consisted of 144 clerical employees self-reporting personality with the PCI measure and performance evaluated by respective managers. Group 4 engaged 122 volunteers self-reporting personality via the G10.IPIP and corresponding manager evaluation.

Appendix D. Coding of Studies

Source	Year	Cluster	Trait	Leader Level	Sample	Measure	*N*	*r*	IV α	DV α	Cor *r*
Strang & Kuhnert (2009)	2009	1	1	2	1	2	67	.17	.80	.89	.20
Cavazotte, Moreno, & Hickmann (2012)	2012	9	1	2	1	2	134	.13	.64	.86	.18
Bass, Wurster, Doll, & Glair (1953)	1953	1	1	2	1	2	140	.09	.76	1.00	.10
Judge & Bono (2000)	2000	1	1	2	1	2	107	.03	.89	.89	.03
Guilford (1952)	1952	1	1	1	1	2	208	.06	.76	.69	.08
Guilford (1952)	1952	1	1	2	1	2	143	.10	.76	.69	.14
Aronson, Reilly, & Lynn (2006)	2006	1	1	2	1	1	143	.10	.76	1.00	.11
Bergman, Lornudd,Sjöberg, & Von Thiele Schwarz (2014)	2014	10	1	2	1	2	589	.11	.54	.86	.16
Bergman, Lornudd,Sjöberg, & Von Thiele Schwarz (2014)	2014	10	1	2	1	2	589	.02	.54	.86	.03
Piedmont & Weinstein (1994)	1994	1	1	3	1	2	209	-.13	.76	.82	-.16
Robertson, Gibbons, Baron, MacIver, & Nyfield (1999)	1999	1	1	2	1	2	437	.03	.80	.89	.04
Rothmann & Coetzer (2003)	2003	0	1	3	1	1	159	.31	.89	.86	.35
Salgado & Rumbo (1997)	1997	3	1	2	1	2	125	-.04	.58	.58	-.07
deHoogh, den Hartog, & Koopman (2005)	2005	2	1	2	1	2	61	-.24	.69	.86	-.31
Hunter, Neubert, Perry, Witt, Penney, & Weinberger (2012)	2012	1	1	4	1	1	118	.12	.80	1.00	.13
Hofmann & Jones (2005)	2005	1	1	4	1	1	68	-.20	.95	1.00	-.21
McCormack & Mellor (2002)	2002	1	1	2	2	2	99	-.01	.89	.94	-.01
Peterson, Smith, Martorana, & Owens (2003)	2003	1	1	1	1	1	17	-.53	.76	1.00	-.61
Bradley, Nicol, Charbonneau, & Meyer (2002)	2002	1	1	2	2	2	174	-.06	.76	.89	-.07
Barrick & Mount (1993)	1993	1	1	2	2	2	146	.01	.67	.88	.01
Barrick , Mount, & Strauss (1993)	1993	1	1	3	1	2	91	.15	.67	.75	.21
Barrick , Mount, & Strauss (1993)	1993	1	1	3	1	1	91	-.01	.67	1.00	-.01
Seibert & Kraimer (2001)	2001	1	1	3	1	1	496	-.11	.82	1.00	-.12
van der Linden, Oostrom, Born, van, & Serlie (2014)	2014	2	1	3	1	2	106	.16	.85	.85	.19

Study Coding Continued

Source	Year	Cluster	Trait	Leader Level	Sample	Measure	*N*	*r*	IV α	DV α	Cor *r*
Blickle, Meurs, Zettler, Solga, Noethen, Kramer, & Ferris (2008)	2008	2	1	3	1	2	326	.02	.64	.80	.03
Nadkami & Hermann (2010)	2010	8	1	1	1	1	195	.19	.74	1.00	.22
Blickle, Wendel, & Ferris (2010)	2010	2	1	3	1	1	112	.06	.76	1.00	.07
Sümer & Sümer (2007)	2007	6	1	2	2	2	1111	.59	.81	.88	.70
Li, Zhou, Zhao, Zhang, & Zhang (2015)	2015	7	1	2	1	2	79	-.11	.62	.86	-.15
Farrington (2012)	2012	0	1	2	1	1	383	.09	.60	.86	.13
Lazaridou & Beka (2014)	2014	5	1	2	1	2	105	-.24	.68	.84	-.31
Benoliel (2014)	2014	6	1	3	1	2	153	.16	.61	.88	.22
Ülke & Bilgiç (2011)	2011	6	1	2	1	2	151	.09	.64	.93	.12
Hui, Pak, & Cheng (2009)	2009	7	1	2	1	2	145	-.06	.67	.84	-.08
Hui, Pak, & Cheng (2009)	2009	7	1	3	1	2	112	.04	.67	.84	.05
Tay, Ang, & vanDyne (2006)	2006	7	1	3	1	1	229	.12	.76	1.00	.14
Lim & Ployhart (2004)	2004	7	1	2	2	2	39	.28	.74	.86	.35
Ployhart, Lim, & Chan (2001)	2001	7	1	3	2	2	1259	.07	.76	.86	.09
Nahaya, Taib, Ismail, Shariff, Yahaya, Boon, & Hashim (2011)	2011	8	1	2	1	2	300	.27	.77	.89	.33
Patterson & Mechinda (2011)	2011	8	1	3	1	2	270	.31	.82	.84	.37
Matin, Jandaghi, & Ahmadi (2010)	2010	8	1	3	1	2	100	.27	.76	.84	.34
Doucet, Shao, Wang, Oldham (2016)	2016	1	1	3	1	2	70	.12	.80	.63	.17
deJong, Song, & Song (2013)	2013	1	1	1	1	1	369	.34	.87	1.00	.36
Bakker-Pieper & deVries (2013)	2013	2	1	2	1	2	120	.36	.89	.84	.42
Bergner, Neubauer, & Kreuzthaler (2010)	2010	2	1	2	1	1	130	.05	.70	1.00	.06
Bergner, Neubauer, & Kreuzthaler (2010)	2010	2	1	2	1	2	129	.03	.70	.88	.04
Bergner, Neubauer, & Kreuzthaler (2010)	2010	2	1	2	1	2	128	.24	.70	.88	.31
Johnson & Hill (2009)	2009	1	1	2	2	5	57	.82	.95	1.00	.84
Kell, Rittmayer, Crook, & Motowidlo (2010)	2010	1	1	3	1	2	100	.77	.95	.98	.80

Study Coding Continued

Source	Year	Cluster	Trait	Leader Level	Sample	Measure	*N*	*r*	IV α	DV α	Cor *r*
Lent & Schwartz (2012)	2012	1	1	3	1	2	340	.21	.76	.71	.29
Bakker, van der Zee, Lewig, & Dollard (2006)	2006	2	1	3	1	2	80	.25	.80	.84	.30
Boyatzis, Good, & Massa (2012)	2012	1	1	1	1	1	60	-.08	.91	1.00	-.08
Bartone, Eid, Johnsen, Laberg, & Snook (2009)	2009	1	1	3	2	2	901	.12	.52	.86	.18
Guay, Oh, Choi, Mitchell, Mount & Shin (2013)	2013	7	1	3	1	2	113	.23	.75	.79	.30
Guay, Oh, Choi, Mitchell, Mount & Shin (2013)	2013	7	1	3	1	2	113	.19	.75	.93	.23
Uppal (2014)	2014	8	1	3	1	2	760	.14	.82	.90	.16
Cortina, Doherty, Schmitt, Kaufman, & Smith (1992)	1992	1	1	3	2	2	145	.06	.76	.98	.07
Klang (2012)	2012	10	1	3	1	2	34	.07	.89	.90	.08
Salgado, Rumbo, Santamaria, & Losada (1995)	1995	3	1	2	1	2	93	.02	.73	.86	.03
García-Izquierdo, García-Izquierdo, & Ramos-Villagrasa (2007)	2007	3	1	3	1	5	127	-.23	.83	1.00	-.25
vanKaijk & Vos (2006)	2006	2	1	3	2	2	721	-.07	1.00	1.00	-.07
vanKaijk & Vos (2006)	2006	2	1	3	2	2	721	.05	1.00	1.00	.05
Hülsheger, Specht, & Spinath (2006)	2006	2	1	3	1	1	90	-.15	.82	1.00	-.17
Hollanda (2014)	2014	9	1	2	2	2	1294	.42	.69	.84	.55
Strang & Kuhnert (2009)	2009	1	3	2	1	2	67	-.02	.90	.89	-.02
Cavazotte, Moreno, & Hickmann (2012)	2012	9	3	2	1	2	134	.30	.65	.86	.40
Bass, Wurster, Doll, & Glair (1953)	1953	1	3	2	1	2	140	.06	.80	1.00	.07
Bruce (1953)	1953	1	3	2	1	2	107	.08	.78	.89	.09
Judge & Bono (2000)	2000	1	3	2	1	2	107	.19	.89	.89	.21
Richardson & Hanawalt (1944)	1944	1	3	1	1	5	230	.29	.78	1.00	.33
Richardson & Hanawalt (1944)	1944	1	3	2	1	5	178	.16	.78	1.00	.18
Guilford (1952)	1952	1	3	1	1	2	208	-.16	.80	.69	-.22
Guilford (1952)	1952	1	3	2	1	2	143	-.03	.80	.69	-.04
Meyer & Pressel (1954)	1954	1	3	1	1	5	57	-.05	.80	1.00	-.06

Study Coding Continued

Source	Year	Cluster	Trait	Leader Level	Sample	Measure	*N*	*r*	IV α	DV α	Cor *r*
Meyer & Pressel (1954)	1954	1	3	2	1	5	100	-.03	.80	1.00	-.03
Hinrichs (1969)	1969	1	3	2	1	2	47	.37	.80	.86	.45
Hinrichs (1969)	1969	1	3	2	1	1	47	.01	.80	1.00	.01
Aronson, Reilly, & Lynn (2006)	2006	1	3	2	1	1	143	.12	.80	1.00	.13
Bauer, Erdogan, Liden, & Wayne (2006)	2006	1	3	1	1	2	67	.25	.82	.91	.29
Bergman, Lornudd,Sjöberg, & Von Thiele Schwarz (2014)	2014	10	3	2	1	2	589	.20	.75	.86	.25
Bergman, Lornudd,Sjöberg, & Von Thiele Schwarz (2014)	2014	10	3	2	1	2	589	.03	.75	.86	.04
Piedmont & Weinstein (1994)	1994	1	3	3	1	2	209	.07	.80	.82	.09
Robertson, Gibbons, Baron, MacIver, & Nyfield (1999)	1999	1	3	2	1	2	437	-.03	.85	.89	-.03
Rothmann & Coetzer (2003)	2003	0	3	3	1	1	159	.21	.89	.86	.24
Salgado & Rumbo (1997)	1997	3	3	2	1	2	125	.17	.72	.58	.26
van den Berg & Feij (1993)	1993	2	3	3	1	2	163	.20	.80	.81	.25
van den Berg & Feij (2003)	2003	2	3	3	1	2	161	.00	.81	.81	.00
deHoogh, den Hartog, & Koopman (2005)	2005	2	3	2	1	2	61	-.05	.79	.86	-.06
Hunter, Neubert, Perry, Witt, Penney, & Weinberger (2012)	2012	1	3	4	1	1	118	.03	.84	1.00	.03
Greenwood & McNamara (1969(	1969	1	3	2	1	2	296	.18	.80	.86	.22
Hanawalt & Richardson (1944)	1944	1	3	1	1	5	127	-.24	.78	1.00	-.27
Hanawalt & Richardson (1944)	1944	1	3	2	1	5	178	.04	.78	1.00	.05
Hofmann & Jones (2005)	2005	1	3	4	1	1	68	-.19	.76	1.00	-.22
McCormack & Mellor (2002)	2002	1	3	2	2	2	99	-.20	.89	.94	-.22
Thomasa, Dickson, & Bliese (2001)	2001	1	3	2	2	2	818	.14	.85	.86	.16
Alkahtani, Abu-Jarad, Sykaunab & Nikbim (2011)	2011	8	3	2	1	2	105	.23	.78	.86	.28
Peterson, Smith, Martorana, & Owens (2003)	2003	1	3	1	1	1	17	-.53	.80	1.00	-.59
Hendler (1999)	1999	1	3	1	1	1	18	.31	.60	.95	.41
Hendler (1999)	1999	1	3	2	1	1	28	-.15	.60	.95	-.20

Study Coding Continued

Source	Year	Cluster	Trait	Leader Level	Sample	Measure	*N*	*r*	IV α	DV α	Cor *r*
Ng, Ang, & Chan (2008)	2008	7	3	2	2	2	394	.19	.88	.94	.21
Barrick & Mount (1993)	1993	1	3	2	2	2	146	.18	.85	.88	.21
Barrick , Mount, & Strauss (1993)	1993	1	3	3	1	2	91	.04	.81	.75	.05
Barrick , Mount, & Strauss (1993)	1993	1	3	3	1	1	91	-.01	.81	1.00	-.01
Seibert & Kraimer (2001)	2001	1	3	3	1	1	496	.08	.90	1.00	.08
Burbeck & Furnham (1984)	1984	1	3	3	2	5	319	.13	.78	1.00	.15
van der Linden, Oostrom, Born, van, & Serlie (2014)	2014	2	3	3	1	2	106	.11	.93	.85	.12
Nadkami & Hermann (2010)	2010	8	3	1	1	1	195	.30	.70	1.00	.36
Blickle, Wendel, & Ferris (2010)	2010	2	3	3	1	1	112	.06	.65	1.00	.07
Sümer & Sümer (2007)	2007	6	3	2	2	2	1111	.46	.70	.88	.59
Li, Zhou, Zhao, Zhang, & Zhang (2015)	2015	7	3	2	1	2	79	.61	.62	.86	.84
Farrington (2012)	2012	0	3	2	1	1	383	.16	.70	.86	.21
Lazaridou & Beka (2014)	2014	5	3	2	1	2	105	.25	.68	.84	.32
Benoliel (2014)	2014	6	3	3	1	2	153	.19	.77	.88	.23
Ülke & Bilgiç (2011)	2011	6	3	2	1	2	151	-.22	.66	.93	-.28
Idzikowski & Baddeley (1987)	1987	1	3	3	1	2	59	-.04	.78	.86	-.05
Campbell, Prien, & Brailey (1960)	1960	1	3	3	1	2	41	-.04	.80	.86	-.05
Chi, Tsai, & Tseng (2013)	2013	7	3	2	1	2	61	.11	.85	.77	.14
Judge, Ilies, & Zhang (2012)	2012	10	3	2	1	2	594	.11	.94	.76	.13
Hui, Pak, & Cheng (2009)	2009	7	3	2	1	2	145	.35	.68	.84	.46
Hui, Pak, & Cheng (2009)	2009	7	3	3	1	2	112	.22	.68	.84	.29
Tay, Ang, & vanDyne (2006)	2006	7	3	3	1	1	229	.24	.78	1.00	.27
Lim & Ployhart (2004)	2004	7	3	2	2	2	39	.50	.77	.86	.61
Ployhart, Lim, & Chan (2001)	2001	7	3	3	2	2	1259	.21	.83	.86	.25
Nahaya, Taib, Ismail, Shariff, Yahaya, Boon, & Hashim (2011)	2011	8	3	2	1	2	300	-.01	.75	.89	-.01

Study Coding Continued

Source	Year	Cluster	Trait	Leader Level	Sample	Measure	*N*	*r*	IV α	DV α	Cor *r*
Patterson & Mechinda (2011)	2011	8	3	2	1	2	270	.11	.88	.84	.13
Matin, Jandaghi, & Ahmadi (2010)	2010	8	3	3	1	2	100	.40	.80	.84	.49
deJong, Song, & Song (2013)	2013	1	3	1	1	1	369	.33	.95	1.00	.34
Bakker-Pieper & deVries (2013)	2013	2	3	2	1	2	120	.55	.84	.84	.65
Bergner, Neubauer, & Kreuzthaler (2010)	2010	2	3	2	1	1	130	.00	.73	1.00	.00
Bergner, Neubauer, & Kreuzthaler (2010)	2010	2	3	2	1	2	129	.09	.73	.88	.11
Bergner, Neubauer, & Kreuzthaler (2010)	2010	2	3	2	1	2	128	.23	.73	.88	.29
Renaud (1996)	1996	1	3	3	1	2	33	.29	.89	.97	.31
Monteiro, Serrano, & Rodriguez (2012)	2012	3	3	3	2	2	255	.24	.77	.85	.30
Johnson & Hill (2009)	2009	1	3	2	2	5	57	.82	.89	1.00	.87
Kell, Rittmayer, Crook, & Motowidlo (2010)	2010	1	3	3	1	2	100	.48	.93	.98	.50
Lent & Schwartz (2012)	2012	1	3	3	1	2	340	.00	.83	.71	.00
Bakker, van der Zee, Lewig, & Dollard (2006)	2006	2	3	3	1	2	80	.35	.82	.84	.42
Grotzinger (1959)	1959	1	3	2	2	2	52	-.23	.80	1.00	-.26
Boyatzis, Good, & Massa (2012)	2012	1	3	1	1	1	60	.09	.91	1.00	.09
Bartone, Eid, Johnsen, Laberg, & Snook (2009)	2009	1	3	3	2	2	850	.10	.60	.86	.14
Guay, Oh, Choi, Mitchell, Mount & Shin (2013)	2013	7	3	3	1	2	113	.08	.81	.79	.10
Guay, Oh, Choi, Mitchell, Mount & Shin (2013)	2013	7	3	3	1	2	113	-.01	.81	.93	-.01
Witt (2002)	2002	1	3	3	1	2	195	.04	.86	.93	.04
Witt (2002)	2002	1	3	3	1	2	144	-.10	.86	.93	-.11
Witt (2002)	2002	1	3	3	1	2	122	-.12	.86	.93	-.13
Uppal (2014)	2014	8	3	3	1	2	760	.13	.79	.90	.15
Cortina, Doherty, Schmitt, Kaufman, & Smith (1992)	1992	1	3	3	2	2	145	-.04	.80	.98	-.05
Klang (2012)	2012	10	3	3	1	2	34	.33	.88	.90	.37
Salgado, Rumbo, Santamaria, & Losada (1995)	1995	3	3	2	1	2	93	-.19	.75	.86	-.24

Study Coding Continued

Source	Year	Cluster	Trait	Leader Level	Sample	Measure	*N*	*r*	IV α	DV α	Cor *r*
Lai, Lam, & Chow (2015)	2015	7	3	3	1	2	403	.00	.88	.93	.00
Alonso Arenal & Fernandez Pereira (1979)	1979	3	3	3	1	5	80	.16	.78	1.00	.18
García-Izquierdo, García-Izquierdo, & Ramos-Villagrasa (2007)	2007	3	3	3	1	5	127	.35	.84	1.00	.38
vanKaijk & Vos (2006)	2006	2	3	3	2	2	721	-.18	1.00	1.00	-.18
vanKaijk & Vos (2006)	2006	2	3	3	2	2	721	-.20	1.00	1.00	-.20
Blanco & Salgado (1992)	1992	3	3	3	1	2	30	.07	.78	.49	.11
Blanco & Salgado (1992)	1992	3	3	3	1	2	30	-.25	.78	.49	-.41
Hülsheger, Specht, & Spinath (2006)	2006	2	3	3	1	1	90	.09	.86	1.00	.10
Roma (2006)	2006	9	3	1	1	1	65	.12	.80	1.00	.13
Roma (2006)	2006	9	3	1	1	1	68	.01	.80	1.00	.01
Hollanda (2014)	2014	9	3	2	2	2	1294	-.10	.71	.84	-.13
Strang & Kuhnert (2009)	2009	1	4	2	1	2	67	.09	.87	.89	.11
Cavazotte, Moreno, & Hickmann (2012)	2012	9	4	2	1	2	134	.29	.75	.86	.36
Judge & Bono (2000)	2000	1	4	2	1	2	107	.27	.91	.89	.30
Aronson, Reilly, & Lynn (2006)	2006	1	4	2	1	1	143	.17	.78	1.00	.19
Bergman, Lornudd,Sjöberg, & Von Thiele Schwarz (2014)	2014	10	4	2	1	2	589	.23	.67	.86	.30
Bergman, Lornudd,Sjöberg, & Von Thiele Schwarz (2014)	2014	10	4	2	1	2	589	-.03	.67	.86	-.04
Piedmont & Weinstein (1994)	1994	1	4	3	1	2	209	.04	.78	.82	.05
Robertson, Gibbons, Baron, MacIver, & Nyfield (1999)	1999	1	4	2	1	2	437	-.12	.82	.89	-.14
Rothmann & Coetzer (2003)	2003	0	4	3	1	1	159	.41	.91	.86	.46
Salgado & Rumbo (1997)	1997	3	4	2	1	2	125	-.14	.58	.58	-.24
deHoogh, den Hartog, & Koopman (2005)	2005	2	4	2	1	2	61	.06	.64	.86	.08
Hofmann & Jones (2005)	2005	1	4	4	1	1	68	-.11	.84	1.00	-.12
McCormack & Mellor (2002)	2002	1	4	2	2	2	99	.30	.91	.94	.32
Alkahtani, Abu-Jarad, Sykaunab & Nikbim (2011)	2011	8	4	2	1	2	105	.23	.86	.86	.27

Study Coding Continued

Source	Year	Cluster	Trait	Leader Level	Sample	Measure	*N*	*r*	IV α	DV α	Cor *r*
Peterson, Smith, Martorana, & Owens (2003)	2003	1	4	1	1	1	17	-.53	.78	1.00	-.60
Williams (2004)	2004	1	4	3	1	2	208	.17	.78	.89	.20
Barrick & Mount (1993)	1993	1	4	2	2	2	146	.13	.86	.88	.15
Barrick , Mount, & Strauss (1993)	1993	1	4	3	1	2	91	.15	.82	.75	.19
Barrick , Mount, & Strauss (1993)	1993	1	4	3	1	1	91	.08	.82	1.00	.09
Seibert & Kraimer (2001)	2001	1	4	3	1	1	496	-.08	.75	1.00	-.09
van der Linden, Oostrom, Born, van, & Serlie (2014)	2014	2	4	3	1	2	106	.20	.90	.85	.23
Nadkami & Hermann (2010)	2010	8	4	1	1	1	195	.32	.72	1.00	.38
Blickle, Wendel, & Ferris (2010)	2010	2	4	3	1	1	112	.01	.74	1.00	.01
Sümer & Sümer (2007)	2007	6	4	2	2	2	1111	.57	.74	.88	.71
Li, Zhou, Zhao, Zhang, & Zhang (2015)	2015	7	4	2	1	2	79	.35	.62	.86	.48
vanWoerkom & deReuver (2009)	2009	2	4	2	1	2	138	.09	.82	.86	.11
Farrington (2012)	2012	0	4	2	1	1	383	.19	.71	.86	.25
Benoliel (2014)	2014	6	4	3	1	2	153	.10	.68	.88	.13
Ülke & Bilgiç (2011)	2011	6	4	2	1	2	151	-.20	.77	.93	-.24
Hui, Pak, & Cheng (2009)	2009	7	4	2	1	2	145	.13	.55	.84	.19
Hui, Pak, & Cheng (2009)	2009	7	4	3	1	2	112	.18	.55	.84	.26
Tay, Ang, & vanDyne (2006)	2006	7	4	3	1	1	229	.19	.84	1.00	.21
Lim & Ployhart (2004)	2004	7	4	2	2	2	39	.37	.80	.86	.45
Ployhart, Lim, & Chan (2001)	2001	7	4	3	2	2	1259	.08	.80	.86	.10
Nahaya, Taib, Ismail, Shariff, Yahaya, Boon, & Hashim (2011)	2011	8	4	2	1	2	300	.22	.83	.89	.26
Matin, Jandaghi, & Ahmadi (2010)	2010	8	4	3	1	2	100	.53	.78	.84	.65
deJong, Song, & Song (2013)	2013	1	4	1	1	1	369	.40	.86	1.00	.43
Bakker-Pieper & deVries (2013)	2013	2	4	2	1	2	120	.31	.83	.84	.37
Bergner, Neubauer, & Kreuzthaler (2010)	2010	2	4	2	1	1	130	-.06	.71	1.00	-.07

Study Coding Continued

Source	Year	Cluster	Trait	Leader Level	Sample	Measure	*N*	*r*	IV α	DV α	Cor *r*
Bergner, Neubauer, & Kreuzthaler (2010)	2010	2	4	2	1	2	129	-.13	.71	.88	-.16
Bergner, Neubauer, & Kreuzthaler (2010)	2010	2	4	2	1	2	128	.36	.71	.88	.46
Monteiro, Serrano, & Rodriguez (2012)	2012	3	4	3	2	2	255	.19	.73	.85	.24
Johnson & Hill (2009)	2009	1	4	2	2	5	57	.46	.88	1.00	.49
Kell, Rittmayer, Crook, & Motowidlo (2010)	2010	1	4	3	1	2	100	.74	.91	.98	.79
Lent & Schwartz (2012)	2012	1	4	3	1	2	340	.00	.80	.71	-.01
Boyatzis, Good, & Massa (2012)	2012	1	4	1	1	1	60	-.15	.91	1.00	-.16
Bartone, Eid, Johnsen, Laberg, & Snook (2009)	2009	1	4	3	2	2	880	.00	.60	.86	.00
Guay, Oh, Choi, Mitchell, Mount & Shin (2013)	2013	7	4	3	1	2	113	.06	.79	.79	.08
Guay, Oh, Choi, Mitchell, Mount & Shin (2013)	2013	7	4	3	1	2	113	-.01	.79	.93	-.01
Uppal (2014)	2014	8	4	3	1	2	760	.10	.78	.90	.12
Cortina, Doherty, Schmitt, Kaufman, & Smith (1992)	1992	1	4	3	2	2	145	-.19	.78	.98	-.22
Klang (2012)	2012	10	4	3	1	2	34	.10	.88	.90	.11
Salgado, Rumbo, Santamaria, & Losada (1995)	1995	3	4	2	1	2	93	.17	.75	.86	.21
García-Izquierdo, García-Izquierdo, & Ramos-Villagrasa (2007)	2007	3	4	3	1	5	127	.16	.82	1.00	.18
vanKaijk & Vos (2006)	2006	2	4	3	2	2	721	.02	1.00	1.00	.02
vanKaijk & Vos (2006)	2006	2	4	3	2	2	721	.18	1.00	1.00	.18
Hülsheger, Specht, & Spinath (2006)	2006	2	4	3	1	1	90	-.17	.88	1.00	-.18
Hollanda (2014)	2014	9	4	2	2	2	1294	.27	.74	.84	.34
Strang & Kuhnert (2009)	2009	1	5	2	1	2	67	-.07	.82	.89	-.08
Cavazotte, Moreno, & Hickmann (2012)	2012	9	5	2	1	2	134	.20	.70	.86	.26
Bass, Wurster, Doll, & Glair (1953)	1953	1	5	2	1	2	140	.20	.80	1.00	.22
Bruce (1953)	1953	1	5	2	1	2	107	.10	.91	.89	.11
Judge & Bono (2000)	2000	1	5	2	1	2	107	.16	.93	.89	.18
Richardson & Hanawalt (1944)	1944	1	5	1	1	5	230	.28	.91	1.00	.30

Study Coding Continued

Source	Year	Cluster	Trait	Leader Level	Sample	Measure	*N*	*r*	IV α	DV α	Cor *r*
Richardson & Hanawalt (1944)	1944	1	5	2	1	5	178	.22	.91	1.00	.23
Guilford (1952)	1952	1	5	1	1	2	208	-.04	.80	.69	-.05
Guilford (1952)	1952	1	5	2	1	2	143	-.19	.80	.69	-.26
Hinrichs (1969)	1969	1	5	2	1	2	47	-.37	.80	.86	-.45
Hinrichs (1969)	1969	1	5	2	1	1	47	-.06	.80	1.00	-.07
Aronson, Reilly, & Lynn (2006)	2006	1	5	2	1	1	143	.13	.80	1.00	.15
Bergman, Lornudd,Sjöberg, & Von Thiele Schwarz (2014)	2014	10	5	2	1	2	589	.25	.68	.86	.33
Bergman, Lornudd,Sjöberg, & Von Thiele Schwarz (2014)	2014	10	5	2	1	2	589	.04	.68	.86	.05
Piedmont & Weinstein (1994)	1994	1	5	3	1	2	209	.12	.80	.82	.15
Robertson, Gibbons, Baron, MacIver, & Nyfield (1999)	1999	1	5	2	1	2	437	-.13	.80	.89	-.15
Rothmann & Coetzer (2003)	2003	0	5	3	1	1	159	.31	.93	.86	.35
Salgado & Rumbo (1997)	1997	3	5	2	1	2	125	.30	.76	.58	.45
van den Berg & Feij (1993)	1993	2	5	3	1	2	163	.21	.80	.81	.26
van den Berg & Feij (2003)	2003	2	5	3	1	2	161	.00	.82	.81	.00
deHoogh, den Hartog, & Koopman (2005)	2005	2	5	2	1	2	61	-.11	.86	.86	-.13
Greenwood & McNamara (1969(	1969	1	5	2	1	2	296	-.05	.80	.86	-.06
Hanawalt & Richardson (1944)	1944	1	5	2	1	5	178	.49	.91	1.00	.51
Hofmann & Jones (2005)	2005	1	5	4	1	1	68	-.28	.47	1.00	-.41
McCormack & Mellor (2002)	2002	1	5	2	2	2	99	.10	.93	.94	.11
Alkahtani, Abu-Jarad, Sykaunab & Nikbim (2011)	2011	8	5	2	1	2	105	.21	.84	.86	.24
Peterson, Smith, Martorana, & Owens (2003)	2003	1	5	1	1	1	17	.53	.80	1.00	.59
Bradley, Nicol, Charbonneau, & Meyer (2002)	2002	1	5	2	2	2	174	.09	.80	.89	.11
Ng, Ang, & Chan (2008)	2008	7	5	2	2	2	394	.21	.82	.94	.24
Barrick & Mount (1993)	1993	1	5	2	2	2	146	.00	.85	.88	.00
Barrick , Mount, & Strauss (1993)	1993	1	5	3	1	2	91	-.09	.81	.75	-.12

Study Coding Continued

Source	Year	Cluster	Trait	Leader Level	Sample	Measure	*N*	*r*	IV α	DV α	Cor *r*
Barrick , Mount, & Strauss (1993)	1993	1	5	3	1	1	91	.03	.81	1.00	.03
Jabeen, Cherian, & Pech (2012)	2012	8	5	2	1	1	152	.04	.80	1.00	.04
Seibert & Kraimer (2001)	2001	1	5	3	1	1	496	.08	.81	1.00	.09
Burbeck & Furnham (1984)	1984	1	5	3	2	5	319	.10	.80	1.00	.11
van der Linden, Oostrom, Born, van, & Serlie (2014)	2014	2	5	3	1	2	106	.11	.87	.85	.13
Nadkami & Hermann (2010)	2010	8	5	1	1	1	195	-.29	.79	1.00	-.33
Blickle, Wendel, & Ferris (2010)	2010	2	5	3	1	1	112	.36	.75	1.00	.42
Li, Zhou, Zhao, Zhang, & Zhang (2015)	2015	7	5	2	1	2	79	.36	.62	.86	.50
vanWoerkom & deReuver (2009)	2009	2	5	2	1	2	138	-.01	.78	.86	-.01
Farrington (2012)	2012	0	5	2	1	1	383	.10	.53	.86	.14
Benoliel (2014)	2014	6	5	3	1	2	153	-.05	.78	.88	-.06
Ülke & Bilgiç (2011)	2011	6	5	2	1	2	151	.14	.72	.93	.17
Li & Ahlstrom (2016)	2016	7	5	3	1	2	192	.12	.76	.72	.16
Idzikowski & Baddeley (1987)	1987	1	5	3	1	2	59	.04	.78	.86	.05
Harrell (1960)	1960	1	5	3	1	5	21	-.13	.91	1.00	-.14
Campbell, Prien, & Brailey (1960)	1960	1	5	3	1	2	41	.24	.80	.86	.29
Chi, Tsai, & Tseng (2013)	2013	7	5	2	1	2	61	.35	.78	.77	.45
Chen (2013)	2013	7	5	3	1	2	303	.33	.73	.88	.41
Hui, Pak, & Cheng (2009)	2009	7	5	2	1	2	145	.41	.84	.84	.49
Hui, Pak, & Cheng (2009)	2009	7	5	3	1	2	112	.09	.84	.84	.11
Tay, Ang, & vanDyne (2006)	2006	7	5	3	1	1	229	.06	.74	1.00	.07
Lim & Ployhart (2004)	2004	7	5	2	2	2	39	.56	.82	.86	.67
Ployhart, Lim, & Chan (2001)	2001	7	5	3	2	2	1259	-.15	.80	.86	-.18
Nahaya, Taib, Ismail, Shariff, Yahaya, Boon, & Hashim (2011)	2011	8	5	2	1	2	300	-.14	.73	.89	-.17
Patterson & Mechinda (2011)	2011	8	5	3	1	2	270	.21	.78	.84	.26

Study Coding Continued

Source	Year	Cluster	Trait	Leader Level	Sample	Measure	*N*	*r*	IV α	DV α	Cor *r*
Matin, Jandaghi, & Ahmadi (2010)	2010	8	5	3	1	2	100	.21	.80	.84	.26
deJong, Song, & Song (2013)	2013	1	5	1	1	1	369	-.24	.82	1.00	-.27
Bakker-Pieper & deVries (2013)	2013	2	5	2	1	2	120	.30	.79	.84	.37
deHoogh & denHartog (2009)	2009	2	5	2	1	2	91	.65	.70	.91	.81
Bergner, Neubauer, & Kreuzthaler (2010)	2010	2	5	2	1	1	130	.15	.86	1.00	.16
Bergner, Neubauer, & Kreuzthaler (2010)	2010	2	5	2	1	2	129	.14	.86	.88	.16
Bergner, Neubauer, & Kreuzthaler (2010)	2010	2	5	2	1	2	128	.08	.86	.88	.09
Renaud (1996)	1996	1	5	3	1	2	33	-.03	.66	.97	-.04
Monteiro, Serrano, & Rodriguez (2012)	2012	3	5	3	2	2	255	.14	.86	.85	.16
Johnson & Hill (2009)	2009	1	5	2	2	5	57	.89	.93	1.00	.92
Kell, Rittmayer, Crook, & Motowidlo (2010)	2010	1	5	3	1	2	100	.78	.92	.98	.82
Lent & Schwartz (2012)	2012	1	5	3	1	2	340	.26	.80	.71	.34
Bakker, van der Zee, Lewig, & Dollard (2006)	2006	2	5	3	1	2	80	.17	.78	.84	.21
Grotzinger (1959)	1959	1	5	2	2	2	52	-.23	.80	1.00	-.26
Boyatzis, Good, & Massa (2012)	2012	1	5	1	1	1	60	.08	.91	1.00	.08
Bartone, Eid, Johnsen, Laberg, & Snook (2009)	2009	1	5	3	2	2	879	.07	.67	.86	.09
Guay, Oh, Choi, Mitchell, Mount & Shin (2013)	2013	7	5	3	1	2	113	.11	.84	.79	.14
Guay, Oh, Choi, Mitchell, Mount & Shin (2013)	2013	7	5	3	1	2	113	.10	.84	.93	.11
Uppal (2014)	2014	8	5	3	1	2	760	.22	.86	.90	.25
Cortina, Doherty, Schmitt, Kaufman, & Smith (1992)	1992	1	5	3	2	2	145	.16	.68	.98	.20
Klang (2012)	2012	10	5	3	1	2	34	.26	.90	.90	.29
Salgado, Rumbo, Santamaria, & Losada (1995)	1995	3	5	2	1	2	93	.09	.73	.86	.11
Alonso Arenal & Fernandez Pereira (1979)	1979	3	5	3	1	5	80	-.05	.78	1.00	-.06
García-Izquierdo, García-Izquierdo, & Ramos-Villagrasa (2007)	2007	3	5	3	1	5	127	.01	.90	1.00	.01
vanKaijk & Vos (2006)	2006	2	5	3	2	2	721	-.15	1.00	1.00	-.15

Study Coding Continued

Source	Year	Cluster	Trait	Leader Level	Sample	Measure	*N*	*r*	IV α	DV α	Cor *r*
vanKaijk & Vos (2006)	2006	2	5	3	2	2	721	-.26	1.00	1.00	-.26
Blanco & Salgado (1992)	1992	3	5	3	1	2	30	.19	.78	.49	.31
Blanco & Salgado (1992)	1992	3	5	3	1	2	30	-.07	.78	.49	-.11
Hülsheger, Specht, & Spinath (2006)	2006	2	5	3	1	1	90	.43	.94	1.00	.44
Roma (2006)	2006	9	5	1	1	1	65	-.44	.80	1.00	-.49
Roma (2006)	2006	9	5	1	1	1	68	.38	.80	1.00	.42
Hollanda (2014)	2014	9	5	2	2	2	1294	.29	.70	.84	.38
Strang & Kuhnert (2009)	2009	1	2	2	1	2	67	.09	.90	.89	.09
Cavazotte, Moreno, & Hickmann (2012)	2012	9	2	2	1	2	134	.37	.70	.86	.48
Judge & Bono (2000)	2000	1	2	2	1	2	107	-.04	.91	.89	-.04
Aronson, Reilly, & Lynn (2006)	2006	1	2	2	1	1	143	.14	.79	1.00	.16
Bergman, Lornudd,Sjöberg, & Von Thiele Schwarz (2014)	2014	10	2	2	1	2	589	-.07	.62	.86	-.10
Bergman, Lornudd,Sjöberg, & Von Thiele Schwarz (2014)	2014	10	2	2	1	2	589	-.15	.62	.86	-.21
Piedmont & Weinstein (1994)	1994	1	2	3	1	2	209	.19	.79	.82	.24
Robertson, Gibbons, Baron, MacIver, & Nyfield (1999)	1999	1	2	2	1	2	437	.22	.84	.89	.25
Rothmann & Coetzer (2003)	2003	0	2	3	1	1	159	.10	.91	.86	.11
Salgado & Rumbo (1997)	1997	3	2	2	1	2	125	.42	.74	.58	.64
deHoogh, den Hartog, & Koopman (2005)	2005	2	2	2	1	2	61	-.05	.82	.86	-.06
Hofmann & Jones (2005)	2005	1	2	4	1	1	68	-.17	.90	1.00	-.18
McCormack & Mellor (2002)	2002	1	2	2	2	2	99	.29	.91	.94	.31
Alkahtani, Abu-Jarad, Sykaunab & Nikbim (2011)	2011	8	2	2	1	2	105	.17	.89	.86	.19
Peterson, Smith, Martorana, & Owens (2003)	2003	1	2	1	1	1	17	-.53	.79	1.00	-.60
Bradley, Nicol, Charbonneau, & Meyer (2002)	2002	1	2	2	2	2	174	.08	.79	.89	.10
Hendler (1999)	1999	1	2	1	1	1	18	.47	.76	.95	.55
Hendler (1999)	1999	1	2	2	1	1	28	.07	.76	.95	.08

Study Coding Continued

Source	Year	Cluster	Trait	Leader Level	Sample	Measure	*N*	*r*	IV α	DV α	Cor *r*
Ng, Ang, & Chan (2008)	2008	7	2	2	2	2	394	.20	.74	.94	.24
Barrick & Mount (1993)	1993	1	2	2	2	2	146	.32	.89	.88	.36
Barrick , Mount, & Strauss (1993)	1993	1	2	3	1	2	91	.29	.85	.75	.36
Barrick , Mount, & Strauss (1993)	1993	1	2	3	1	1	91	.21	.85	1.00	.23
Seibert & Kraimer (2001)	2001	1	2	3	1	1	496	-.03	.84	1.00	-.03
van der Linden, Oostrom, Born, van, & Serlie (2014)	2014	2	2	3	1	2	106	.16	.92	.85	.18
Blickle, Meurs, Zettler, Solga, Noethen, Kramer, & Ferris (2008)	2008	2	2	3	1	2	326	.10	.54	.80	.15
Nadkami & Hermann (2010)	2010	8	2	1	1	1	195	-.28	.81	1.00	-.31
Blickle, Momm, Schneider, Gansen, & Kramer (2009)	2009	2	2	3	1	2	54	-.02	.55	.78	-.03
Blickle, Momm, Schneider, Gansen, & Kramer (2009)	2009	2	2	3	1	2	42	.26	.55	.78	.40
Blickle, Wendel, & Ferris (2010)	2010	2	2	3	1	1	112	.18	.77	1.00	.21
Li, Zhou, Zhao, Zhang, & Zhang (2015)	2015	7	2	2	1	2	79	.57	.62	.86	.78
Farrington (2012)	2012	0	2	2	1	1	383	.18	.67	.86	.24
Lazaridou & Beka (2014)	2014	5	2	2	1	2	105	.20	.68	.84	.26
Benoliel (2014)	2014	6	2	3	1	2	153	.07	.76	.88	.09
Ülke & Bilgiç (2011)	2011	6	2	2	1	2	151	.00	.75	.93	.00
Nesbit, Ho, & Nesbit (2014)	2014	7	2	3	1	2	407	.21	.81	.92	.24
Judge, Ilies, & Zhang (2012)	2012	10	2	2	1	2	594	.27	.73	.76	.36
Hui, Pak, & Cheng (2009)	2009	7	2	2	1	2	145	.24	.72	.84	.31
Hui, Pak, & Cheng (2009)	2009	7	2	3	1	2	112	.08	.72	.84	.10
Tay, Ang, & vanDyne (2006)	2006	7	2	3	1	1	229	.27	.83	1.00	.30
Lim & Ployhart (2004)	2004	7	2	2	2	2	39	.18	.72	.86	.23
Ployhart, Lim, & Chan (2001)	2001	7	2	3	2	2	1259	.11	.77	.86	.14
Nahaya, Taib, Ismail, Shariff, Yahaya, Boon, & Hashim (2011)	2011	8	2	2	1	2	300	.54	.84	.89	.62
Patterson & Mechinda (2011)	2011	8	2	3	1	2	270	.41	.78	.84	.51

Study Coding Continued

Source	Year	Cluster	Trait	Leader Level	Sample	Measure	*N*	*r*	IV α	DV α	Cor *r*
Matin, Jandaghi, & Ahmadi (2010)	2010	8	2	3	1	2	100	.31	.79	.84	.37
deJong, Song, & Song (2013)	2013	1	2	1	1	1	369	.27	.95	1.00	.28
Bakker-Pieper & deVries (2013)	2013	2	2	2	1	2	120	.55	.82	.84	.66
Bergner, Neubauer, & Kreuzthaler (2010)	2010	2	2	2	1	1	130	.11	.83	1.00	.12
Bergner, Neubauer, & Kreuzthaler (2010)	2010	2	2	2	1	2	129	.25	.83	.88	.29
Bergner, Neubauer, & Kreuzthaler (2010)	2010	2	2	2	1	2	128	-.03	.83	.88	-.04
Johnson & Hill (2009)	2009	1	2	2	2	5	57	.83	.94	1.00	.86
Kell, Rittmayer, Crook, & Motowidlo (2010)	2010	1	2	3	1	2	100	.88	.95	.98	.91
Lent & Schwartz (2012)	2012	1	2	3	1	2	340	.10	.77	.71	.14
Bakker, van der Zee, Lewig, & Dollard (2006)	2006	2	2	3	1	2	80	-.01	.79	.84	-.01
Boyatzis, Good, & Massa (2012)	2012	1	2	1	1	1	60	.30	.91	1.00	.32
Bartone, Eid, Johnsen, Laberg, & Snook (2009)	2009	1	2	3	2	2	768	.15	.60	.86	.21
Guay, Oh, Choi, Mitchell, Mount & Shin (2013)	2013	7	2	3	1	2	113	.22	.86	.79	.27
Guay, Oh, Choi, Mitchell, Mount & Shin (2013)	2013	7	2	3	1	2	113	.29	.86	.93	.32
Stewart (1999)	1999	1	2	3	1	1	183	.79	.90	.78	.94
Witt (2002)	2002	1	2	3	1	2	195	.11	.78	.93	.13
Witt (2002)	2002	1	2	3	1	2	144	.34	.78	.93	.40
Witt (2002)	2002	1	2	3	1	2	122	.20	.78	.93	.23
Robertson, Baron, Gibbons, MacIver, & Nyfield (1999)	2000	1	2	2	1	2	437	.09	.84	.86	.11
Lin, Ma, Wang, & Wang (2015)	2015	7	2	3	1	2	250	.17	.71	.96	.21
Liu, Liu, Mills, & Fan (2015)	2013	7	2	3	2	2	487	.21	.82	.84	.25
Wang, Wu, & Mobley	2013	7	2	3	1	2	167	.09	.90	.77	.11
Wang, Wu, & Mobley	2013	7	2	2	1	2	269	.16	.90	.77	.19
Uppal (2014)	2014	8	2	3	1	2	760	.30	.75	.90	.37
Cortina, Doherty, Schmitt, Kaufman, & Smith (1992)	1992	1	2	3	2	2	145	-.17	.28	.98	-.32

Study Coding Continued

Source	Year	Cluster	Trait	Leader Level	Sample	Measure	*N*	*r*	IV *α*	DV *α*	Cor *r*
Klang (2012)	2012	10	2	3	1	2	34	.39	.94	.90	.42
Salgado, Rumbo, Santamaria, & Losada (1995)	1995	3	2	2	1	2	93	-.04	.79	.86	-.05
García-Izquierdo, García-Izquierdo, & Ramos-Villagrasa (2007)	2007	3	2	3	1	5	127	-.01	.88	1.00	-.01
vanKaijk & Vos (2006)	2006	2	2	3	2	2	721	-.18	1.00	1.00	-.18
vanKaijk & Vos (2006)	2006	2	2	3	2	2	721	-.10	1.00	1.00	-.10
Hülsheger, Specht, & Spinath (2006)	2006	2	2	3	1	1	90	.19	.90	1.00	.20
Roma (2006)	2006	9	2	1	1	1	65	-.23	.79	1.00	-.26
Roma (2006)	2006	9	2	1	1	1	68	.12	.79	1.00	.14
Hollanda (2014)	2014	9	2	2	2	2	1294	.42	.69	.84	.55

Notes: Clusters, 0 = South Africa, 1 = Anglo, 2 = Germanic, 3 = Latin European, 4 = Africa, 5 = Eastern European, 6 = Middle Eastern, 7 = Confucian, 8 = Southeast Asian, 9 = Latin American, 10 = Nordic. Traits, 1 = Agreeableness, 2 = Conscientiousness, 3 = Extraversion, 4 = Openness, 5 = Stability. Leader Level, 1 = Top Leader, 2 = Formal Leader/Manager, 3 = Informal Leader/Employee, 4 = Group. Sample, 1 = Organizational, 2 = Military/Government. Measure, 1 = Economic, 2 = Performance Appraisal, 5 = Comparative. IV = Independent Variable. DV = Dependent Variable.

Curriculum Vitae

Laura Motel
S85 W23210 Chateau Lane, Big Bend, WI 53103
lmotel@uwm.edu
Cell: 815-603-8869, Alt: 262-662-1983

Education

2017 ABD: Department of Communication
University of Wisconsin – Milwaukee
Leadership and Intercultural Communication with themes of Diversity

2011 M.A.: Communication Arts and Sciences
Governors State University
University Park, IL

1998 B.B.A: Business, concentration in Accounting
Robert Morris University
Orland Park, IL

Employment History

2016 - Present University of Wisconsin, Milwaukee - Lecturer

2012 – Present Advanced Elevator
President, board member and majority shareholder of Milwaukee-based elevator company.

2001 – Present Computershare, Communication Services Division
2016: **Vice President** of the Internal Strategic communication group responsible for managing a national business unit that provides financial communications to investors through multiple communication channels including print & mail, SMS, Internet, and other eChannels.
2007: **General Manager, Compliance Solutions** division driven by promoting up/cross-sell opportunities for specific omnichannel communication solutions for public companies via a team of national professionals.
2001: **Controller** that actively participated in developing a new business facility through managing people and projects and accounting for and explaining financial events.

1997 – 2001 Uniforms to You, a division of Cintas
Progressive growth from Intern to **Senior Accountant.**

Teaching Experience

Lecturer, University of Wisconsin, Milwaukee (2016 – 2017)

- Business and Professional Communication
- One year, online

Training Courses – Design & Execution

- Understanding Compliance Communications (since 2012)
  Provides adult learners a basic understanding of shareholder communication channels including annual meeting financial print output and purpose, EDGAR (Electronic Data Gathering Archival and Retrival) HTML (HyperText Markup Language) and XBRL (eXtensible Business Reporting Language) filings, and online hosting and presentation under Notice and Access legislation.
- Cross-selling Compliance Communications (since 2012)
  Provides adult learners education on cross-selling techniques, methods for securing referrals, and overcoming objections specifically for regulatory communications.
- Business Communication for Beginners (since 2013)
  Provides adult learners a framework for professional communication through lecture, discussion, and role play. Topics include politeness, crafting appropriate emails, phone etiquette, and self as a representative of the organization.
- Leadership Training (2015)
  The first six months involve 4 meetings learning and practicing brainstorming, articulating, organizing, framing and presenting ideas to senior management, and defining a successful project. The latter six months focus on project implementation through learning consensus building, resource negotiation, and measuring outcomes. Finally, participants share results in a formal presentation to senior management.

Awards & Recognitions

Top Student Paper, Association for Business Communication, National Communication Conference, November, 2015.

Publications

Burrell, N. & Motel, L. (In Press). Frequency distributions. *The SAGE Encyclopedia of Communication Research Methods*, ed. Allen, M.

Cole, A. W., Anderson, C., Bunton, T. E., Cherney, M. R., Cronin Fisher, V., Draeger Jr., R., Fetherston, M., Motel, L., Nicolini, K. M., Peck, B., & Allen, M. (in press). Student predisposition to instructor feedback and perceptions of teaching presence predict motivation toward online courses. *Online Learning.*

Motel, L. (Photographer). (2014, August 11). *Fireworks*, [digital image]. Retrieved from: http://www.boatingmag.com/photos/july-2014-pets-board-winner/

Motel, L. (2016). Increasing diversity through goal-setting in corporate social responsibility reporting. *Equality, Diversity, & Inclusion: An International Journal*, 35.

Motel, L. (In Press). Odd ratios. *The SAGE Encyclopedia of Communication Research Methods*, ed. Allen, M.

Motel, L. (2016). Sex symbols: A pilot study examining the effects of a content analysis of gendered visual imagery in cross cultural road signs. *Journal of Intercultural Communication, 41*. http://immi.se/intercultural/

Presentations

Allen, M., Baker, B., Jagiello, K., Cherney, M., Motel, L., & Peck, B. (2017). *Head orientation during confrontations during the Presidential primary debates.* Paper presented at the Central States Communication Association Conference, Minneapolis, Minnesota.

Motel, L. (2008). *How will XBRL impact your organization?* Webinar presented on behalf of Computershare.

Motel, L. (2011). *XBRL – eXtensible Business Reporting Language.* Webinar presented on behalf of Computershare.

Motel, L. (2011). *XBRL for cross-border clients.* Webinar presented on behalf of Computershare.

Motel, L. (2015). *The suits speak: Experienced negotiators' practices for achieving desired outcomes.* Paper presented at the National Communication Association Conference, Las Vegas, Nevada. (Top student paper).

Motel, L. & Stoll, A. (2015). *The changing face of leadership: A meta-analysis of personality traits as predictors of leadership effectiveness over time*. Paper presented at the National Communication Association Conference, Las Vegas, Nevada. (Top student paper).

Motel, L. (2016). *Increasing workplace diversity through goal-setting*. Paper presented at the Association for Business Communication Regional Conference, Cape Town, South Africa.

Service (Work)

2015:

- Designed and presented a "best practices" study in cross-sell/up-sell for the Relationship Managers.

2014:

- Expanded upon the "Employee Engagement Team" to create and implement suggestions to improve morale and job engagement.
- Developed a Leadership Training Program to benefit company and employees.

2013:

- Developed the "Employee Engagement Team" to create and implement suggestions to improve morale and job engagement.
- Participated in health communication campaign to employees.
- Sponsored initiatives to drive a more sustainable workplace.
- Served as a mentor.

Professional Organizations

Association for Business Communication
Central States Communication Association
National Communication Association
National Society of Compliance Professionals