

Running Head: A Multi-Level, Meta-Analytic Review of Hofstede's Cultural Values

Examining the Impact of *Culture's Consequences*: A Three-Decade, Multi-Level, Meta-  
Analytic Review of Hofstede's Cultural Value Dimensions

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## Abstract

Using data from 598 studies representing over 200,000 individuals, we meta-analyze the relationship between Hofstede's (1980a) original four cultural value dimensions and a variety of organizationally relevant outcomes. First, values predict outcomes with similar strength (with an overall absolute weighted effect size of  $p=0.18$ ) at the individual level of analysis. Second, the predictive power of the cultural values was significantly lower than that of personality traits and demographics for certain outcomes (e.g., job performance, absenteeism, turnover), but significantly higher for others (e.g., organizational commitment, identification, citizenship behavior, team-related attitudes, feedback seeking). Third, cultural values were most strongly related to emotions, followed by attitudes, then behaviors, and finally job performance. Fourth, cultural values were more strongly related to outcomes for managers (rather than students), older, male, and more educated respondents. Fifth, findings were stronger for primary, rather than secondary, data. Finally, we provide support for Gelfand, Nishii and Raver's (2006) conceptualization of societal tightness-looseness, finding significantly stronger effects in culturally tighter, rather than looser, countries.

Key words: Hofstede; national culture; cultural values; meta-analysis.

## Examining the Impact of *Culture's Consequences*: A Three-Decade, Multi-Level, Meta-Analytic Review of Hofstede's Cultural Value Dimensions

Thirty years ago, Geert Hofstede (1980a) published his groundbreaking book on cross-cultural differences entitled, *Culture's Consequences: International Differences in Work-Related Values*. Hofstede's original book and his subsequent update entitled, *Culture's Consequences: Comparing Values, Behaviors, Institutions, and Organizations across Nations* (Hofstede, 2001), has inspired thousands of empirical studies of his cultural value dimensions. Recently, Kirkman, Lowe, and Gibson (2006) qualitatively reviewed almost 200 empirical studies using Hofstede's dimensions published in 40 journals and book series between 1980 and 2002. In addition, two other recent qualitative reviews of the cross-cultural organizational behavior and psychology fields covering the last decade show that Hofstede-inspired empirical research is increasing exponentially (Gelfand, Erez, & Aycan, 2007; Tsui, Nifadkar, & Ou, 2007).

Conspicuously absent from these recent qualitative reviews is an attempt to provide a more quantitative examination of the empirical research using Hofstede's cultural value dimensions. An exception is Oyserman, Coon, and Kemmelmeier's (2002) meta-analytic review of individualism-collectivism, a cultural value dimension appearing in Hofstede's (1980a) work as well as many other cultural value frameworks (e.g., House, Hanges, Javidan, Dorfman, & Gupta, 2004; Maznevski, DiStefano, Gomez, Noorderhaven, & Wu, 2002; Schwartz, 1994; Trompenaars, 1993). Oyserman et al. (2002) included 83 studies of individualism-collectivism published between 1980 and 2000 in their review. The purpose of Oyserman et al.'s (2002) work, however, limits the broader conclusions that can be drawn about Hofstede-inspired research. For example, the authors restrict their review to studies of individualism-collectivism, thereby omitting Hofstede's other major cultural value dimensions (i.e., power distance, uncertainty avoidance, and masculinity-

femininity). In addition, the main objective of their review was to determine whether European Americans were more individualistic and less collectivistic than people in other societies. While an interesting research question, it does not address the *impact* of individualism-collectivism on important organizational outcomes. The authors do include outcomes such as self-concept, well-being, cognition, and relationality, but not other organizationally relevant outcomes such as job performance, absenteeism, turnover, motivation, or leadership. Finally, Oyserman et al.'s (2002) meta-analytic review was published over eight years ago and was based on a dataset containing studies published up to 2000 (83 studies total), meaning that the large volume of research on individualism-collectivism published over the last decade has gone unexplored.

In light of these limitations, based on a meta-analysis of 598 studies we examine relationships between Hofstede's (1980a) cultural value dimensions and outcomes that are highly relevant to organizations. Thus, we attempt to make several contributions. First, our meta-analysis builds upon previous qualitative work by Kirkman et al. (2006) who "...took note of a general trend of relatively low amounts of variance explained by the cultural values" (p. 313). However, this assertion was based on reviewing a wide variety of studies examining cultural values and various outcomes at different levels of analysis. Our study allows for a more fine-grained, multi-level, quantitative approach to assessing the predictive power of the cultural value dimensions while taking into account the specific cultural value and type of criterion variable (e.g., emotions, attitudes and perceptions, behaviors, and job performance).

Second, while individualism-collectivism has received the bulk of attention by cross-cultural researchers, it is not known if this value has stronger predictive power than the other values. Since the authors of cross-cultural reviews have encouraged researchers to move beyond individualism-collectivism (Gelfand et al., 2007; Kirkman et al., 2006; Tsui et al., 2007),

assessing the relative predictive power of all of the values could help researchers with their choice to include other theoretically-supported values. Similarly, at the individual level of analysis, not much is known about the predictive power of cultural values compared to other predictors such as personality traits, general mental ability, or demographic characteristics. Our meta-analysis compares cultural value effects against other possible predictors of employee outcomes. If cultural values explain similar amounts of variance for outcomes such as job performance or organizational commitment relative to these other frequently used predictors, researchers may be more motivated to include cultural values in addition to measures of personality or intelligence when attempting to predict important employee outcomes.

Finally, we also examine theoretically important *moderators* of cultural value main effects. We examine the extent to which effect sizes are influenced by the nature of the sample (e.g., organization vs. student samples, demographics), the use of primary data (e.g., survey) versus secondary data (e.g., archival country scores), and one nation level factor (i.e., cultural tightness-looseness; Gelfand et al., 2006). Thus, beyond determining effect sizes for the cultural values, a major purpose is to determine *when* cultural values matter most, a question of great importance to both scholars and practitioners (Gibson, Maznevski, & Kirkman, 2009). It is likely that cultural values have much stronger effects under certain conditions compared to others (Kirkman et al., 2006). Establishing the boundary conditions for cultural value effects should: a) allow researchers to better understand and interpret their study findings; and b) help practitioners to determine the conditions under which cultural values are likely to have more meaningful influences on organizationally relevant outcomes. Examining moderators also helps to respond to Gelfand et al. (2007) who conclude, "...research in cross-cultural OB still focuses largely on cultural main effects and ignores situational factors as...moderators."

### A Brief Review of Hofstede's Cultural Value Dimensions

Hofstede (1980a, p. 25) defined culture as "...the collective programming of the mind which distinguishes the members of one human group from another." He developed his cultural value framework with data from about 116,000 morale surveys completed by 88,000 IBM employees living in 72 countries and regions (reduced to 40 countries that had more than 50 responses each) and speaking twenty languages in the late 1960s and early 1970s. Country level factor analytic results allowed him to classify the represented countries along four dimensions. The influence of the IBM study on subsequent understanding of culture is hard to overestimate – virtually all later models of culture included Hofstede's dimensions and conformed to his approach (for reviews, see Taras, Rowney, & Steel, 2009; Taras & Steel, 2009). For example, although he has a competing framework, Trompenaars (1993, p. iii) acknowledges Hofstede "for opening management's eyes to the importance of the [cross-cultural management] subject."

The first dimension, *individualism-collectivism*, is defined as "the degree to which people in a country prefer to act as individuals rather than as members of groups" (Hofstede, 1994, p. 6). More specifically, individualism is "a loosely knit social framework in which people are supposed to take care of themselves and of their immediate families only," while collectivism "is characterized by a tight social framework in which people distinguish between ingroups and outgroups, they expect their ingroup to look after them, and in exchange for that they feel they owe absolute loyalty to it" (Hofstede, 1980b, p. 45).

Subsequent research on the construct suggested that individualism and collectivism may be two independent dimensions (e.g., Markus & Kitayama, 1991). Other models split each of the facets into vertical and horizontal subdimensions (e.g., Singelis, Triandis, Bhawuk, & Gelfand, 1995). To remain consistent with Hofstede's (1980a) original model of culture, we treat

individualism and collectivism as extremes of a single dimension. Our methodology section provides more details on how we handle the challenge of coding studies that differentiated between horizontal/vertical facets of individualism-collectivism or treated the two as independent constructs.

The second dimension is *power distance*, defined as “the extent to which a society accepts the fact that power in institutions and organizations is distributed unequally” (Hofstede, 1980b, p. 45). Alternatively, it is the extent to which subordinates are not expected to express disagreement with their supervisors and supervisors are not expected to consult with their subordinates in the decision making process (Hofstede, 1980a; 2001). There is very little variation in how power distance is defined in subsequent research, and most cultural value measurement instruments are highly consistent with Hofstede’s operationalization.

Third, *uncertainty avoidance* is defined as “the extent to which a society feels threatened by uncertain and ambiguous situations and tries to avoid these situations by providing greater career stability, establishing more formal rules, not tolerating deviant ideas and behaviors, and believing in absolute truths and the attainment of expertise” (1980b, p. 45). Uncertainty avoidance should not be confused with risk avoidance – “it does not describe one’s willingness to take or avoid risk, but rather is associated with preferences for clear rules and guidance” (Hofstede, 2001, p. 149).

The fourth dimension is *masculinity-femininity*, with masculinity defined as “the extent to which the dominant values in society are ‘masculine’ – that is, assertiveness, the acquisition of money and things” (Hofstede, 1980b, p. 46) and femininity defined as the opposite of masculinity – that is, dominance of such feminine values as “preference friendly atmosphere, position security, physical conditions, [and] cooperation” (Hofstede, 2001, p. 281). In other

words, masculinity is “the degree to which values like assertiveness, performance, success and competition...prevail over values like the quality of life, maintaining warm personal relationships, care for the weak, and solidarity” (Hofstede, 1994, p. 6).

Michael Harris Bond (Chinese Culture Connection, 1987) and later Hofstede and Bond (1988) developed a fifth dimension, *Confucian dynamism* (i.e., long- versus short-term orientation). Long-term orientation refers to future-oriented values like persistence and thrift, while a short-term orientation refers to past- and present-oriented values like respect for tradition and fulfilling social obligations. Due to the lack of empirical research that includes Confucian dynamism, we were unable to include it in our meta-analytic examination.

### Research Questions and Hypotheses

Due to the proliferation of Hofstede-inspired empirical research over the last three decades, one can imagine an almost limitless list of research questions and hypotheses to explore in a meta-analytic fashion. To narrow down these possibilities, we attempt to address several theoretically compelling questions presented in two research questions and several formal hypotheses below. We organize our review into two parts. First, we deal with issues involving the predictive power of cultural value dimensions’ main effects including potential differences in the predictive power of the four dimensions in general, across all studies and levels and as determined by general groupings of outcome variables (i.e., emotions, attitudes and perceptions, behaviors, and job performance). Second, we explore potential moderators or boundary conditions of cultural value main effects including: a) demographics; b) data source; and c) cultural tightness-looseness. By identifying the various factors affecting the predictive power of cultural value main effects, we may be able to better explain some of the mixed findings in previous research (Gelfand et al., 2007; Tsui et al., 2007). In addition, we may be able to qualify



Kirkman et al.'s (2006) assertion that cultural values typically explain only small amounts of variance in main effect studies. We turn now to a theoretical discussion of the predictive power of the main effects of the cultural value dimensions.

### *The Predictive Power of Cultural Values as Main Effects*

There has been a long history in the behavioral sciences of examining the main effects of values, in general, on outcomes such as attitudes and behaviors (Homer & Kahle, 1988). Thus, we wish to complement this stream of research by meta-analytically examining main effects of *cultural* values, specifically. We first discuss possible main effect differences based on specific cultural values, the relative predictive power of cultural values compared to other frequently used predictors of employee outcomes, and differences based on specific outcome variables.

*Specific cultural value.* Hofstede (1980a) included four cultural value dimensions in his original framework allowing for a more comprehensive multi-dimensional evaluation of effect of culture. However, all of the recent reviews of the cross-cultural organizational behavior and psychology literature conclude that there has been an overreliance on individualism-collectivism compared to Hofstede's other value dimensions (Gelfand et al., 2007; Tsui et al., 2007). Such an overreliance might lead researchers to conclude that individualism-collectivism has stronger predictive power than the other dimensions in empirical research. On the other hand, qualitative (Earley & Gibson, 1998) and quantitative (Oyserman et al., 2002) reviews of individualism-collectivism identified a number of problems related to the definition and conceptualization of the construct, leading Earley and Gibson (1998, p. 296) to: a) conclude that "...measurement problems stem from the fuzziness of its domain and definition;" and b) call for a moratorium on individualism-collectivism research (clearly unheeded). *Ceteris paribus*, unreliability could lead to lower predictive power compared to the other cultural values (Rosenthal, Rosnow, & Rubin,

2000; Rosnow & Rosenthal, 1996), which have indeed demonstrated higher reliabilities (Kirkman et al., 2006). In any case, there is no compelling theoretical reason why some of the cultural value dimensions should have stronger predictive power than others, particularly when looking across all levels and all outcomes. Due to the lack of compelling theory and existing quantitative attention to all of the cultural values simultaneously, we make no a priori assumptions about their relative predictive power. Thus, rather than present a formal hypothesis, we ask the following research question:

*Research Question #1.* Do significant differences exist in the overall predictive power of individualism-collectivism, power distance, uncertainty avoidance, and masculinity-femininity?

*Predictive power for organizationally relevant outcomes compared to other individual level predictors.* Another important question is how strongly cultural values predict individual level outcomes compared to other frequently examined predictors such as personality traits, general mental ability, and demographics. A challenging aspect of our meta-analysis is that Hofstede's (1980a) cultural value dimensions have been empirically linked to a widely disparate array of individual level outcomes. In order to draw meaningful conclusions with regard to comparing effect sizes against other individual level predictors, it was necessary to group outcomes together. When grouping our outcome variables, we relied on existing frameworks found in comprehensive reviews of the organizational behavior and psychology literatures (e.g., Ilgen & Klein, 1989; Rousseau, 1997). Using this existing literature as a guide, we were able to categorize criteria into five broad outcome categories (with 83 specific types of outcomes within these five categories) including: emotions (e.g., both the tendency to display emotions and emotions experienced such as anxiety, depression, and embarrassability); attitudes and

perceptions (e.g., organizational commitment, job satisfaction, organizational identification, leadership style preferences, preference for teamwork); behaviors (e.g., organizational citizenship behaviors, turnover, absenteeism, effort, innovation, communication behavior, conflict management handling behaviors); traits (e.g., the Big Five, locus of control, self-efficacy, self-esteem), and job performance. Note that due to the relative stability of individual traits compared to the other categories of outcomes and the fact that we compare the predictive power of cultural values to personality, we do not include traits to avoid tautological issues.

Clearly, one could imagine alternative classification schemes, but we believe our categorization provides a parsimonious, theoretically-supported way to examine the effects of cultural values on important groups of organizationally relevant outcomes. Since there has been no comprehensive quantitative review of the Hofstede-inspired research, the predictive power of the cultural values compared to other individual attributes remains an open issue. Thus, we present the following research question:

*Research Question #2.* Do cultural values have significantly different predictive power compared to other individual level predictors (i.e., personality traits, general mental ability, and demographics) on organizationally relevant outcomes (i.e., emotions, attitudes and perceptions, behaviors, and job performance)?

*Outcome variables.* Existing theory regarding the impact of values can inform specific predictions about the relative predictive power of Hofstede's cultural values with respect to our general outcome classification scheme discussed above (i.e., emotions, attitudes and perceptions, behaviors, and job performance). One criterion for determining relative predictive power is assessing how closely matched the bandwidth is between predictors and criteria (Campbell, 1990). Broadband predictors assess global criteria better than specific criteria and vice versa. As

predictors, values are generally considered broad tendencies (Rokeach, 1973). Thus, we argue that cultural values should be relatively stronger predictors of broader criteria like emotions rather than more specific criteria such as attitudes and perceptions, behaviors, or job performance. When assessing how strongly values can predict these more specific criteria, research on the value-attitude-behavior hierarchy argues that values are more proximally related to attitudes and perceptions and more distally related to behaviors (Homer & Kahle, 1988). Thus, we expect that cultural values will be more strongly related to attitudes and perceptions compared to behaviors. Finally, we argue that job performance is the most distal from cultural values. In fact, the overall direct relationship between cultural values and performance may be close to zero as previous research has shown that it may be fully mediated by the fit between cultural values and management practices (e.g., Newman & Nollen, 1996). Thus, we predict:

*Hypothesis 1.* The predictive power of individualism-collectivism, power distance, uncertainty avoidance, and masculinity-femininity will be the strongest for emotions, followed by attitudes and perceptions, then behaviors, and finally job performance.

#### *Moderators of Cultural Value Main Effects*

As we discussed in our introduction, examining potential moderators of cultural value main effects can help to determine *when* cultural values matter most (Gibson et al., 2009). Researchers have theoretically surmised (Leung, Bhagat, Buchan, Erez, & Gibson, 2005; Kirkman et al., 2006) but never comprehensively tested the notion that cultural values may have stronger effects under certain conditions compared to others. Moderator analyses should have both research and practical implications by specifying the conditions under which cultural values are likely to have more meaningful influences on organizationally relevant outcomes. We first describe the potential moderating effects of respondent demographic characteristics (i.e., age,

nature of the sample, sex, education level), followed by data source (i.e., the use of primary versus secondary data), and then cultural tightness-looseness.

*Demographics.* Because almost all studies that incorporate measures of Hofstede's (1980a) cultural value dimensions also include measures of sample demographic characteristics, existing research presents excellent opportunities for examining demographic attributes as moderators of cultural value effects (Kirkman et al., 2006). Due to data availability, we could test moderating effects only at the individual level of analysis. First, we argue that the predictive power of the cultural values will be stronger for older, rather than younger, respondents. Our argument is rooted in the concept of *traitedness* (Allport, 1937). *Traited* individuals are those who have internalized or identify themselves with a given trait. Those people who possess a strong internal representation of a trait tend to act more consistent with it across diverse situations, increasing the strength of the trait's relationship with behaviors or espoused beliefs – in other words, they know who they are (Britt, 1993). As Church (2000) notes, applying the notion of *traitedness* specifically to culture, those “being less sensitive to situational cues and as more guided in their behavior by internal dispositions would be relatively ‘traited’ in their behavior and show greater behavioral consistency across trait-relevant situations” (p. 660). Consequently, higher *traitedness* increases the predictive power of a certain trait as “the strength and the relevance of a particular trait to the person *moderates the correlation* [italics added] between scores on a given scale and relevant behavior” (Britt, 1993, p. 554). It is important to understand that *traitedness* does not change one's scores on a trait but means that one is more likely to respond consistently with one's traits.

Research has shown that younger, rather than older, people are on average less *traited*, and their values are more malleable and have a weaker effect on behavior and attitudes

(Baumeister, 1997; Brandtstaedter & Greve, 1994; Coleman, Ivani-Chalian, & Robinson, 1999). As traitedness increases with age, values start playing a more important role and variation in attitudinal and behavioral responses associated with a particular trait decreases. This assumption is also supported by numerous studies on acculturation that consistently show that cultural values of younger people are much more malleable than those of older individuals (e.g., Ouarasse & van de Vijver, 2005; Taras, 2008b). As people age, their traitedness with respect to cultural values increases and is expressed in more consistent behavioral and attitudinal reactions to certain stimuli. Thus, we predict:

*Hypothesis 2a.* The predictive power of individualism-collectivism, power distance, uncertainty avoidance, and masculinity-femininity will be significantly stronger for older, rather than younger, respondents.

Regarding the nature of the sample (i.e., managers/employees versus students), we argue that the effects of cultural values will be stronger for organizational respondents, rather than students, for several reasons. First, students are likely to be younger than organizational employees. As just explained, younger people tend to display a lower level of internalization of cultural values and greater within-group dispersion of scores, and thus their scores on a particular value (either low or high) correlate weaker with corresponding outcomes. Second, working managers and employees are typically members of business organizations, which are reflections of the cultural norms of each society. Compared to students, managers and employees are more closely involved in organizational and societal life and more frequently faced with situations in which they have to make choices about their behavioral and attitudinal reactions to different stimuli. The high frequency of reacting to pertinent stimuli forces people to adapt by developing certain behavioral and attitudinal patterns that best match their core values. The need to make

those important choices more frequently crystallizes behavioral and attitudinal response patterns increasing traitedness and thereby improves trait associations. Moreover, compared to students, managers typically make choices with more important consequences leading to stronger adoption of behavioral and attitudinal styles. This further diminishes uncertainty and variability in the type of responses and strengthens the link between cultural values and responses. As more standardized responses are learned over time, the within-group variation of scores decreases thereby increasing the predictive power of the construct. Thus, we predict:

*Hypothesis 2b.* The predictive power of individualism-collectivism, power distance, uncertainty avoidance, and masculinity-femininity will be significantly stronger for managers and employees, rather than students.

Regarding the sex of the respondents, we argue that the predictive power of the cultural values will be stronger for men, rather than women, for several reasons. First, Cross and Madson (1997) proposed that one of the most basic sex differences is in the self-concept, with women being more likely than men to develop an interdependent or relational self-construal, whereas men are more likely than women to develop an independent or agentic self-construal. Thus, women's behavior is more likely to be driven by the maintenance of relationships than by strict adherence to their individual cultural values (cf. Lee, Pillutla, & Law, 2000). Further, Gilligan (1982) argued that women's identities are defined more by contextual and relational concerns, whereas men's identities are defined more by abstract, rule-based, individual processes in accordance with their cultural norms. While women may be more flexible with regard to their cultural values to maintain relationships, men will likely view relationships as more replaceable (Gilligan, 1982). This pattern has been observed in the area of organizational justice, as various types of justice norms have been more strongly related to individual outcomes for men compared

to women (Farh, Earley, & Lin, 1997; Lee et al., 2000). In addition, Schwartz and Rubel (2005), in a comprehensive cross-cultural study of values with 127 samples from 70 different countries, found that men value self-direction more than women do. Women, in contrast, value benevolence more than men do. These value differences will likely lead men and women to differ in the extent to which they adhere to their values in social situations. For example, a high level of self-direction means that men would likely follow their values more closely in terms of attitudes and behaviors regardless of their relationships; conversely, higher benevolence values on the part of women may mean that they go against their values more often for the sake of their relationships and connections with others. Consequently, as men's responses are less dispersed due to a closer adherence to cultural values, the relationships between values and outcomes will likely be stronger for men, rather than women. Thus, we predict:

*Hypothesis 2c.* The predictive power of individualism-collectivism, power distance, uncertainty avoidance, and masculinity-femininity will be significantly stronger for men, rather than women.

At a national level, Hofstede (2001) considers education as one of the key institutions that perpetuates culture. As people pass through educational systems, they are indoctrinated in existing cultural values, such as through daily pledges of allegiance (Massialas, 1977; Schein, 1967). Also, as Cheng (1998) states, “the process of borrowing educational practices from another society implies an acceptance of cultural values embedded in the particular practices” (p. 14). Consequently, groups of well educated individuals should better represent their country, improving national level correlations. At an individual level, however, education should operate in a similar manner to age and employment status – it increases traitedness. We expect those with higher education have increased autonomy and freedom and thus find it easier to align their



values and behaviors, strengthening the relationship between values and the outcome variables. Notably, at either a national or individual level of analysis, education should increase the observed correlations. Thus, we predict:

*Hypothesis 2d.* The predictive power of individualism-collectivism, power distance, uncertainty avoidance, and masculinity-femininity will be significantly stronger for those with more, rather than less, years of education.

*Data source.* There are two main ways that researchers have operationalized Hofstede's (1980a) cultural value dimensions over the last three decades (Kirkman et al., 2006). First, cultural values are often assessed using primary data; that is, data that are collected from the actual study participants (most often using survey-based, self-reports). Second, cultural values are sometimes *assigned* to participants using country scores from Hofstede's (1980a) original database. There are several reasons why the predictive power of the cultural values will be stronger for research using primary, rather than secondary, data.

Assigning country level scores to individuals is essentially a form of stereotyping as it relies on characteristics of the larger group to define those of the smaller group or individual. The degree to which this is appropriate depends upon the within-group variance. When it is large, the group average does not represent the individuals it contains very well. If there is no variation, the average represents the individual perfectly. In the specific case of national culture, there is a great deal of variation and, hence, it is a significant problem. Cultural values can vary between, as well as within, countries (Au, 1999; Steel & Taras, in press) meaning that using a single score for each country ignores within-country variance. In addition, different regions or subcultures of a single nation can have significantly different cultural values (e.g., Coon & Kemmelmeier, 2001; Huo & Randall, 1991; Lenartowicz, Johnson, & White, 2003). Of course,

assigning all people from a single country the same cultural value scores creates a constant, meaning that within-country correlation analyses will be impossible. Compounding the problem, using country scores derived from previous research also assumes stability in values. Research has shown that culture does change over time (Olivas-Luján, Harzing & McCoy, 2004; Ralston, et al., 2006; Rokeach, 1989), and thus using country means from earlier studies introduces additional error in the measurement of cultural values of individuals.

For these reasons, we believe that when researchers directly assess cultural values using primary data, the data more accurately represents the actual cultural values of the respondents. Thus, the values measured by primary data will have greater predictive power than that measured by secondary data, and studies that measure the effect of culture using original culture scores will report stronger correlations. Consequently, we predict:

*Hypothesis 3.* The predictive power of individualism-collectivism, power distance, uncertainty avoidance, and masculinity-femininity will be significantly stronger for studies using primary, rather than secondary, data.

*Cultural tightness-looseness.* Building on the work of several anthropologists, sociologists, and psychologists (Pelto, 1968; Triandis, 1989), Gelfand et al. (2006, p. 1226) define cultural tightness-looseness as “the strength of social norms and the degree of sanctioning within societies.” In tighter societies, societal institutions promote narrower socialization with higher levels of constraint and highly developed systems of monitoring and sanctioning behavior, whereas looser societies promote broader socialization with lower levels of constraint and weaker systems of monitoring and sanctioning behavior. Following Gelfand et al.’s (2006) conceptual work on cultural tightness-looseness, Gelfand and colleagues (2008b) conducted a large-scale, cross-cultural empirical comparison study that yielded a set of quantitative indexes

corresponding to positions of thirty-three countries along these dimensions. While Gelfand et al. (2006) had no formal predictions about the moderating role of cultural tightness-looseness on the relationship between cultural values and outcomes, we argue that the concept can be used to help determine when cultural values will have stronger effects. For example, Gelfand et al. (2006) do formally predict that variance in individual attributes (e.g., cultural values, attitudes, beliefs, behaviors) will be lower in tighter versus looser societies. In culturally tighter societies, individuals will be allowed much less flexibility in the expression of their individual attributes compared to culturally looser societies. Lower variability is strengthened by the enforcement of both cultural values and employee outcomes in tighter, versus looser, societies. This lack of flexibility would likely mean that individuals' attitudes, perceptions and behaviors would be more closely linked to cultural values in culturally tighter, rather than looser, societies. Thus, we predict:

*Hypothesis 4.* The predictive power of individualism-collectivism, power distance, uncertainty avoidance, and masculinity-femininity will be significantly stronger for culturally tighter, rather than looser, countries.

## Methods

### *Literature Search*

Our literature search was designed to include all available sources that assessed the relationship between cultural values and individual, group/organizational, and national outcomes. First, a computer search was done through the EBSCO, PsycINFO, ERIC, ProQuest, and ProQuest Digital Dissertations electronic databases. Second, comprehensive searches of over three dozen relevant journals for the 1980-2009 period (or since the journal was introduced) were conducted. Third, major books on cross-cultural studies (e.g., Hofstede, 2001; Kim, Triandis,

Kagitcibasi, Choi, & Yoon, 1994; Triandis, 1995) and reviews of Hofstede's work (e.g., Fernandez, Carlson, Stepina, & Nicholson, 1997; Harvey, 1997; Sondergaard, 1994; Williamson, 2002; Yeh, 1988) were examined for links to studies containing data that could be used for the meta-analysis. Fourth, the reference sections of *each* article being coded were reviewed for links to publications potentially containing data for the meta-analysis. Fifth, using the "cited by" function of the Web of Science and Google Scholar databases, publications citing articles coded for our meta-analysis were identified and those containing relevant data were included in our dataset. Sixth, requests for links to more studies were sent out through mailing list servers of the Academy of International Business and the International Management Division of the Academy of Management. Next, all scholars who were authors or co-authors of more than three articles in our database were contacted with a request for links to more published or unpublished studies. The pool included 33 researchers worldwide, 28 of whom replied and provided over one hundred additional references.<sup>1</sup> Finally, our review revealed that some of the studies were based on survey instruments similar to that of Hofstede's, but no codable data were reported. Therefore, 58 authors of 47 articles (many articles were co-authored) were contacted and asked for additional data. From these, 49 authors replied and 37 provided the requested data.

#### *Eligibility Criteria and Data Coding Procedures*

Our initial pool contained over one thousand published and unpublished papers that appeared to satisfy our selection criteria. A common challenge in meta-analysis is that rarely are identical papers summarized. Studies that are considered for inclusion usually differ in terms of methodology, metric, or sample (Rosenthal & DiMatteo, 2001). Fortunately, minor instrument modifications such as transformation of the scale length (e.g., 1 to 5 or 1 to 9), change in the

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<sup>1</sup> We are especially thankful to Dr. Geert Hofstede who has been keeping track of the studies that have utilized his VSM and graciously shared the list of relevant papers and dissertations from his personal library.

sequence of the questions, or adding or dropping individual items are not likely to lead to a substantial alteration of the construct or its psychometric properties. However, if the studies are substantively different, aggregation becomes questionable as it leads to results that, as Hunter and Schmidt (2004) state, “are difficult or impossible to interpret” (p. 457). This is known as the incommensurability or “apples and oranges” problem (Sharpe, 1997) and can have a major impact on the variation in the results (Steel, Schmidt, & Shultz, 2008).

When deciding on whether a study qualified for inclusion in our dataset, we had to consider the tradeoff of increasing the sample size at the expense of reduced commensurability. On the one hand, more relaxed study inclusion criteria allow for a larger dataset. Every additional study makes the review more comprehensive and increases the number of data points available for analysis thereby strengthening statistical power and making it more likely to detect a significant relationship between variables. On the other hand, more liberal inclusion criteria lower the meta-analytic dataset commensurability, which potentially increases variance within the variables and widens confidence intervals thereby decreasing the reliability, and potentially the construct validity, of findings. To ensure validity of our findings, even at the expense of lowered comprehensiveness, we attempted to err conservatively during the process of study selection and coding. That is, when in doubt we excluded a measure, making errors of omission rather than commission. After several waves of coding and re-coding, depending on the dimension, only nine (i.e., for uncertainty avoidance) to 28 (i.e., for individualism-collectivism) from the 134 considered instruments qualified for inclusion. Our meta-analytic dataset contains data from hundreds of studies that assessed the relationship between cultural values and various individual, group/organizational, and national level outcomes. To ensure measurement commensurability on the cultural value side of the relationship, we selected only studies that

defined and operationalized cultural values consistent with the model and methods used by Hofstede (1980a). The choice was straightforward for the studies that used various versions of Hofstede's original Values Survey Module (VSM). A greater challenge was making inclusion decisions for the studies that used other instruments to quantify cultural values. More than one hundred cultural value measurement instruments were considered for inclusion (Taras, 2008a; Taras et al., 2009). To assess measurement similarity, we took a content validation approach, supplemented with an expert opinion survey to resolve most challenging cases, evaluating every instrument's items for consistency with our working definitions of constructs originally introduced by Hofstede and the items of the VSM-82 and VSM-94 instrument versions. For the studies that operationalized cultural values using indices from external datasets, we tracked the source and compared the methodology used in the study with that used by Hofstede (1980a).

Due to a lack of available data, most meta-analyses' aggregation are based on content validation alone. Fortunately, the popularity of Hofstede's (1980a) model has provided some supplementary convergent validity evidence, which provides additional support for our content validation. For example, Schimmack, Oishi, and Diener (2005) empirically addressed the issue of convergent validity between Hofstede's individualism dimension and individualism as measured by instruments developed by Singelis et al. (1995) and Triandis and Gelfand (1998), the two most popular instruments in our meta-analytic dataset after Hofstede's VSM. The results of Schimmack et al.'s (2005) study confirmed convergent validity between individualism scores from Hofstede's dataset and scores representing measures of individualism obtained using these other instruments. Similarly, Maznevski et al. (2002) found that their national averages for the individualism-collectivism construct obtained using their CPQ-4 instrument are "consistent with previous research, e.g., Hofstede, 1980a" (p. 275) and their hierarchy dimension "is similar to

Hofstede's dimension of power distance" and the score pattern is "consistent with his (Hofstede's) results" (p. 287).

Even when terminology suggested construct correspondence, we conducted a thorough comparative analysis of definitions and survey items to ensure that we were not "mixing apples and oranges." Models that treated individualism and collectivism as independent constructs, as opposed to Hofstede's (1980a; 2001) view of individualism and collectivism as the opposites of one continuum, as well as the models that differentiated between horizontal and vertical facets of individualism-collectivism, posed the biggest challenge. To better understand the issue, we carefully reviewed all relevant conceptual and empirical evidence and conducted a comparison of construct definitions and survey items.

Regarding the independence of individualism and collectivism, empirical evidence was conflicting. Many studies reported insignificant correlations between individualism and collectivism, but there were quite a few that reported negative correlations as well as some that reported positive correlations. Since the evidence from earlier research was inconclusive, we made a detailed comparison of the construct definitions, survey items, and empirical data among the studies included in our meta-analytic dataset. The definition comparison indicated that the two constructs were the opposites of one continuum, and the survey items used to measure collectivism were usually negatively worded items found in measures of individualism. Empirically, for the studies that reported separate results for individualism and collectivism, in almost two-thirds of the cases the reported correlations between outcome variables and individualism had the opposite sign compared to their corresponding correlations with collectivism, suggesting that the former is the opposite of the latter. Furthermore, and perhaps most importantly, Hofstede's instrument for quantifying individualism combined both positively

scored individualism items and negatively scored collectivism items. Since the primary concern in meta-analysis is to ensure methodology commensurability across included studies, we believe that combining individualism and collectivism measures into a single composite score, as done by Hofstede, would ensure a greater consistency with our core model. Thus, we coded separate individualism and collectivism scores as one composite index constituting an average of individualism and inverse of collectivism scores.

As for the horizontal/vertical individualism and collectivism distinction which was present in two instruments included in our dataset (Singelis et al., 1995; Triandis & Gelfand, 1998), the results of our comparative analysis of definitions and survey items suggested that the confusion arises mainly from terminology differences. To ensure validity of our decision, we conducted a survey of fourteen independent International Business and Management faculty and Ph.D. students (blind to the purposes of our study) who were asked to classify each of the four constructs along Hofstede's culture dimensions. The survey yielded a very high agreement level and supported our initial decisions. Specifically, a thorough comparison of definitions and items revealed that horizontal individualism was indistinguishable from Hofstede's general individualism construct, and that horizontal collectivism was its opposite. The fourteen raters provided a 92.9 percent agreement on this decision. These scores were coded using the procedure described in the previous paragraph. Regarding vertical individualism, all reviewed definitions and individual items included in measures of vertical individualism referred to concepts such as competitiveness, assertiveness and perceived importance of advancement, which are the basic components of what Hofstede called masculinity. For example, vertical individualism items in Singelis et al.'s (1995) instrument used wording such as "It is important for me that I do my job better than the others" and "Competition is law of nature." Therefore, to maintain consistency



with Hofstede's framework, we coded vertical individualism as masculinity. To check if this decision affected the validity of our results, we conducted a post-hoc validity analysis that revealed that our coding procedures did not have any effect on our results (i.e., the results for masculinity were the same with or without these vertical individualism results included). Furthermore, the fourteen raters provided 100 percent agreement on this decision.

Regarding vertical collectivism, some of the definitions of the construct and some of the survey items referred to hierarchy in a group and respect for authority, which are elements that Hofstede associated with power distance. However, this was not a concern with the more popular measures of vertical collectivism (e.g., Singelis et al., 1995; Triandis & Gelfand, 1998) that, based on our comparative analysis, operationalized vertical collectivism as the opposite of Hofstede's individualism construct and used items that were conceptually very close to Hofstede's negatively scored individualism items. The fourteen raters provided a 96.4 percent agreement on this decision, and thus we coded vertical collectivism as the inverse of general individualism.

We coded the effects of cultural values as our primary variable. Usually these were expressed as correlations between one of the four original Hofstede values and indicators of various outcomes. In a few cases, when the effects were expressed as difference scores (i.e., d-scores), they were converted and coded as Pearson correlation coefficients using standard score conversion equations (Hunter & Schmidt, 2004). We classified our studies as individual, group, and country level depending on the level of the data in their corresponding datasets. Studies that relied on data representing responses of individuals were classified as individual-level studies (refer to Table 2 for results). Studies that used aggregated group and national level data were included in our group and national level analyses of culture's main effects (refer to Tables 3 and

4, respectively). This approach to classifying levels raises concern about the possibility of committing ecological fallacy. Specifically, Hofstede (1980a, 2001) repeatedly stated that his VSM instrument was designed to be used exclusively for national level analysis of culture. This claim has been questioned based on arguments that the original data used to develop the instrument came from an individual level employee attitude survey, and that the instrument items refer to individual preferences and beliefs rather than national level phenomena (e.g., Javidan, House, Dorfman, Hanges & de Luque, 2006). Even though our classification of studies by the level of analysis was based solely on the data level (individual vs. aggregated), to ensure validity of our approach we compared the data generated using Hofstede's VSM (the only instrument used in our individual level analysis claimed to have been developed for national level of analysis) to the data generated using the other individual level instruments. The results showed no substantive differences in means and distribution of the data, not only at the individual, but also at the group and national levels. Thus, for the individual level analyses, we retained studies that used Hofstede's VSM as well as those studies using measures developed specifically for the individual level.

In addition to the main effect, we also coded the sample size, sample demographic characteristics, reliability of the instruments, and the country of origin of the samples. Finally, to test the moderating effect of cultural tightness-looses, our meta-analytic dataset was supplemented with indices from Gelfand et al.'s (2008b) study that provided cultural-looseness scores and ranks for thirty-three countries.

The vast majority of the coded studies were conducted at the individual level of analysis. For the studies that tested the relationships at the group/organization or country levels, in addition to the number of groups/organizations or countries included in the analysis, we also

recorded the number of individuals representing the groups/organizations or national samples. For the four cases when the number of individuals in a particular group/organization or national sample was not reported, the missing sample size was substituted with the average sample size across studies of that type in our meta-analytic dataset. All papers were coded at least twice, with the majority of the studies independently coded three times. Inconsistencies were resolved by re-examining the source article, at times contacting the authors of the original publications for clarification.

Once the studies were coded, their results were grouped into the outcome categories discussed in our theory section. Again, the problem of commensurability arises. Though our research questions were generally broad – primarily dealing with the ability of cultural values to predict certain groups of outcomes – we wanted as much consistency of measures within each group as the available data permitted. To ensure that each result belonged under the appropriate category, we conducted a thorough comparison of construct definitions and original instrument items used to derive each particular data point. Any variable that was not consistent enough with those included in a particular group was excluded from the meta-analysis. In this endeavor, we again erred conservatively. Of 5,452 data points recorded in our original dataset, only 2,453 (1,911 in main analysis, additional 542 added for the moderator analysis) were eventually used in the meta-analysis.

### *Statistical Analysis*

We conducted our study in accordance with Hunter and Schmidt's (2004) meta-analytic procedures for a random-effects model. Correlations were weighted and averaged according to sample size and then corrected for unreliability/attenuation using artifact distribution. On average, the correction for unreliability increased scores by 0.05. The magnitude of the score

increase due to correction was very similar across the cultural dimensions and the outcome types<sup>2</sup>. Sampling error in the measures was calculated at the aggregate level. The main meta-analytic effect sizes were calculated as sample-size weighted reliability-corrected estimates of the relationships between cultural values and outcome variables ( $\rho$ ). Consistent with the tradition in some disciplines (see Dieckmann, Malle, & Bodner, 2009, for a recent review of meta-analytic practices), we also report the uncorrected weighted meta-analytic correlations ( $r$ ). Confidence and credibility intervals of 95% were calculated around each corrected population estimate  $\rho$ . Credibility intervals that do not cross zero indicate good generalizability of the results (i.e., the direction of the relationship holds true for a wide variety of samples). Wide credibility intervals generally indicate possible moderators of main effects, while narrow intervals suggest that the effect does not vary across groups and contexts. In addition to correlations between cultural values and criteria, sample characteristics (e.g., age, education level, sex), national origin of the sample (i.e., country of residence), and data source (i.e., primary versus secondary sets of indices) were coded for control and moderator analysis purposes. These moderators were analyzed using weighted least squares regression (consistent with Steel & Kammeyer-Mueller, 2002). Finally, meta-analysis typically generates summary statistics that are neither clearly independent (different samples) or dependent (same samples), but partially overlapping. Consequently, to evaluate the significance of the differences among effect sizes, we used *independent* sample t-tests, which yield more conservative estimates of the significance level.

## Results

### *Sample Description*

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<sup>2</sup> To calculate the correction for unreliability for a specific outcome, divide the uncorrected correlation coefficient by the reliability-corrected correlation coefficient.

The meta-analytic dataset describes the relationships between cultural values, as defined and operationalized by Hofstede (1980a; 2001), and 82 types of individual level outcomes, as well as six and eighteen types of outcomes for group and country levels, respectively. Effects of cultural values in numerous (300+) other categories were represented by only one or two data points and were excluded from the analysis, as they could not be meaningfully meta-analyzed due to the small number of available observations per relationship. However, these data were included in the moderator analysis. Even though these data described outcomes represented by too few data points to be properly meta-analyzed, they were equally relevant and provided meaningful information about the moderating effect of various factors on the relationship between cultural values and outcomes.

The final pool comprised 598 empirical articles, master's and doctoral theses, conference presentations and unpublished studies from the period between 1980 and 2009, containing data gathered between 1967 and 2008. Of those, 384 papers provided codable numeric coefficients of the degree of association between cultural values and dependent variables included in the study. Another 214 publications were based on a two-sample research design with t-test or ANOVA difference tests with both the culture and the outcome variables being continuous. Generally, any form of association statistics (e.g.,  $F$ ,  $d$ ,  $t$ , etc) can be converted to a corresponding correlation coefficient ( $r$ ), but unfortunately there are some exceptions when such conversions are impossible (e.g., the case of two-sample t-test mean-comparison research design with both variables being continuous). However, even though findings of this type cannot be used to estimate the magnitude of the relationship, they do provide meaningful relevant information about the direction of the relationship and thus, in cases like this, we coded the results as a simple vote count (i.e., positive effect, no effect, negative effect). Table 1 provides a condensed

description of the entire meta-analytic database (i.e., data points used in both main-effect and moderator analyses).

For the main effect analyses, the individual level of measurement was represented by a dataset of 1,605 data points representing relationships between cultural values and organizationally relevant outcomes, of which 1,204 were coded as numeric effect sizes and 401 were coded as vote count. The total sample comprised responses from 224,632 individuals<sup>3</sup> (total 611,816 responses). Additional 49 data points representing aggregated data from an estimated 1,998 groups or organizations (total 3,690 responses) were used for group/organization level analyses. Finally, 258 data points representing 8,904 national samples were used in national-level analyses. Most of the studies that analyzed effects of cultural values at the national level coupled national cultural indices from external sources, such as those reported by Hofstede (1980a; 2001), with various archival national level data. Unfortunately, this approach made it impossible to determine the exact number of individuals participating in these studies. Additional 742 data points representing unique outcome categories that were not included in the main-effect analysis were used in combination with the main dataset in the moderator analysis.

### *Cultural Values as Main Effects*

Tables 2-4 provide summaries of the main effect findings for each of the cultural value dimensions at the individual, group/organization, and national levels, respectively. The tables contain information about the average sample-size weighted uncorrected and unreliability-corrected meta-analytic effect sizes ( $r$  and  $\rho$  correspondingly). Both the  $r$  and  $\rho$  coefficients

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<sup>3</sup> It was impossible to determine the exact total number of individuals as many studies did not report the exact number of individual used in each analysis. The total sample size provided here is an approximation that is based on the sum of total sample sizes reported in each article. Also, the total number of responses (the sum of all N's in Tables 2-4) is different from the total number of individuals that provided the responses. Most studies explored the effects of multiple cultural values and thus responses of the same participants appear separately in the results tables for different cultural values.

represent the degree of association between cultural value dimensions and corresponding outcomes, but corrected meta-analytic effect  $\rho$  is a more accurate estimate of the true relationship in the population. The tables also provide lower and higher boundaries of confidence and credibility intervals around the corrected effect-size estimate  $\rho$  (CoI and CrI), as well as the results of the vote count analysis [i.e., the number of studies that found a significant positive (#+), non-significant (#ns), and significant negative (#-) effect] and the numbers of data points (k) and individuals (N) used to obtain the findings. Of note, the summaries of meta-analytic effects for each group of outcomes are the weighted averages of *absolute* meta-analytic effects. That is, they illustrate only the strength of the effect of culture in each category of outcomes, but not the direction of the effect. Note also that some of the meta-analytic coefficients have been derived based on summaries of very few studies, and thus these findings must be interpreted with caution.

Research Question #1 asked whether or not there were significant differences in predictive power when examining each of the cultural values separately. Albeit overall statistically significant ( $p < 0.01$ ) as per a series of tests for correlation coefficient differences for independent samples, at the individual level of analysis, the differences across dimensions were negligible with an overall weighted absolute effect size of  $\rho = 0.18$ , ranging from  $\rho = 0.15$  for power distance and uncertainty avoidance to  $\rho = 0.19$  for individualism and masculinity. At the higher levels of analysis, the effects of cultural values were found to be less consistent across the four cultural value types. At the group level, the overall absolute effect size averaged  $\rho = 0.21$  and ranged from  $\rho = 0.17$  for power distance to  $\rho = 0.45$  for masculinity, though due to the small sample size the overall difference between the correlation coefficients was statistically insignificant. The difference in predictive power of the cultural values was even more

pronounced (significantly different,  $p < 0.01$ ) at the country level with the range of effect sizes from  $\rho = 0.15$  for masculinity to  $\rho = 0.47$  for individualism, averaging  $\rho = 0.35$ . The difference in conclusions for individual versus aggregate levels of analysis with respect to our Research Question #1 – negligible variation in predictive power of different values at the individual level versus substantial variation at higher levels of analysis, notably at the national level – could be exacerbated by the limited data availability for the analyses at the aggregate levels. Thus, further research may be needed to provide a definitive answer to this question.

While we made no *a priori* predictions about differences in the predictive power of the cultural value dimensions across the different levels of analysis, we did find that the overall effects sizes for the values increased as the level of analysis increased. For example, the overall absolute unreliability corrected weighted effect size was  $\rho = 0.18$  at the individual level,  $\rho = 0.21$  at the group-level, and  $\rho = 0.35$  at the nation-level (see Tables 2-4). Hofstede (1980a; 2001) was clear that his conceptualization and operationalization of cultural values was intended only for the country level of analysis, and researchers attempting to utilize his constructs and measures at lower levels risk committing an ecological fallacy (i.e., assuming higher level constructs and measures will generalize to lower levels). Thus, it may be tempting to conclude that ecological fallacy is the reason that there are stronger relationships when data are analyzed at the country level compared to the individual or group/organization levels. However, a more reasonable rationale for these differences in the magnitude of the effect across levels is the problem of ecological inference (Robinson, 1950; Thorndike, 1939); that is, “relationships among aggregate data tend to be higher than corresponding relationships among individual data elements” (Kozlowski & Klein, 2000, p. 8). As Steel and Ones (2002) review, this increase can often be attributed to a reduction of measurement error at the aggregated level (i.e., aggregated data is



expressed in mean scores which are exceedingly stable when based on large samples). Thus, any comparisons in differences of magnitude of effect across levels in our study must be judged in light of the ecological inference problem.

Research Question #2 asked whether or not the predictive power of the cultural values was as strong as that of other individual level predictors for our groupings of organizationally relevant outcomes. Richard, Bond, and Stokes-Zoota (2003) offer a good starting point with their summary of effect sizes reported in 322 meta-analyses representing over 25,000 social psychology studies on a wide range of issues published in the last 100 years involving over eight million people. According to their comprehensive review, the overall *median* uncorrected effect size across all published studies in social psychology regardless of the topic is  $r=0.18$  (mean  $r=0.21$ ), with about a third reporting effect sizes of less than 0.10 and roughly another third with an effect size of under  $r=0.20$ . Unfortunately, Richard et al.'s (2003) review did not differentiate among individual, group, or national levels of analysis. Our individual-level overall absolute effect size of  $p=0.18$  (uncorrected  $r=0.13$ ), group-level of 0.21 (uncorrected  $r=0.17$ ), and national-level of 0.35 (uncorrected  $r=0.28$ ), as reported in Tables 2-4, are comparable, though a bit lower, than those found by Richard et al. (2003) indicating that the size of the effect of cultural values is similar to that of other popular constructs that have been used in the social sciences.

To more directly compare the predictive power of cultural values versus that of other commonly used predictors of individual outcomes, we conducted a comprehensive search for meta-analytic studies that evaluated the effects of other predictors of emotions, attitudes and perceptions, behavior, and job performance. Demographic characteristics, such as age, gender, and education level, have long been viewed as factors influencing workplace outcomes. In their

review, Makin and Robertson (1986) noted that personality and cognitive tests are also among the best selection tools. Thus, we based our analysis on a comparison of the predictive power of cultural values versus personality, general mental ability, and demographics. We found 82 such individual level meta-analyses, of which 35 explored various effects of personality traits, 25 of general mental ability, and 27 of demographics on emotions, attitudes, behaviors, and performance (the sum is greater than 82 as some of these meta-analyses explored multiple categories).

Table 5 provides a comparison of the predictive power of cultural values versus personality, general mental ability, and demographics based on our groupings of organizationally relevant outcomes (i.e., emotions, attitudes and perceptions, behaviors, and job performance). Overall, the corrected weighted *absolute* average effect size obtained in our meta-analysis ( $\rho=0.18$ ) compares quite favorably against that of demographics ( $\rho=0.10$ ) and personality ( $\rho=0.15$ ). General mental ability was reported to have an overall stronger predictive ability ( $\rho=0.48$ ). The comparative ranking is the same when comparing uncorrected meta-analytic coefficients.

Culture also generally comes out as a comparable or better predictor when the comparison is done separately for emotions, attitudes, behaviors and performance, but there are some notable exceptions. For emotions and attitudes, the average predictive power of culture ( $\rho=0.27$  and  $0.20$  correspondingly) is stronger than that of personality ( $\rho=0.20$  and  $0.18$ ), demographics ( $\rho=0.09$  and  $0.10$ ) and even general mental ability ( $r=0.07$  and  $0.09$ )<sup>4</sup>. However, as we move from broader to more specific outcome categories, the comparison is not always in favor of culture. For example, while overall personality did not compare favorably to culture in

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<sup>4</sup> We found no studies that reported corrected meta-analytic coefficients for the effect of general cognitive ability on emotions and attitudes and thus list here  $r$  rather than  $\rho$  coefficients.

terms of predicting emotions, conscientiousness stood out as a particularly strong predictor ( $p=0.35$ ). Similarly, neuroticism showed somewhat better predictive power with respect to behaviors ( $p=0.23$ ) than culture.

For behaviors, even though culture was found to have a better predictive validity than that of personality and demographics ( $p=0.15$  vs.  $p=0.14$  and  $p=0.13$  respectively), general mental ability was ranked as a definite number one predictor ( $p=0.25$ ). Again, the rankings were not uniform across specific outcomes. While personality overall was found to be just about as good a predictor of behaviors and culture, conscientiousness stood out again as a much stronger predictor ( $p=0.28$ ), and so did work experience ( $p=0.16$ ), which appeared to be a better predictor of behaviors than the other demographic characteristics.

Finally, the comparison was not generally in favor of culture with respect to performance. Culture was found to be the weakest predictor of performance with the direct effect of cultural values being close to zero ( $p=0.03$ ). Demographics and personality showed comparatively better results ( $p=0.12$  and  $p=0.09$  respectively) and general mental ability stood out as a remarkably good predictor ( $p=0.54$ ) of performance.

The results of the comparative analysis of predictive validities were consistent with the value-attitude-behavior hierarchy that considers values and attitudes to be more closely related than values and behaviors (e.g., Homer & Kahle, 1988). Culture did have better predictive validity with respect to emotions and attitudes and was comparatively better than demographics, general mental ability and personality. However, the superiority of culture fades as we move towards more tangible outcomes: for behaviors, culture shows only marginally stronger predictive power than that of personality and demographics and it is weaker than mental ability; for performance, culture comes out as the weakest predictor.

While we asked no research questions nor made any a priori predictions regarding outcomes more specific than our higher level categorization scheme (i.e., emotions, attitudes and perceptions, behaviors, and job performance), our results do allow for examination of specific outcomes that are highly relevant to managers. Note that some of these meta-analytic coefficients were derived based on only three or fewer studies. . The reliability of these results is questionable and they should be interpreted with caution. To warn readers, we provide the number of samples next to the meta-analytic coefficients that are based on a small number of studies. For example, although compared to the effect of general mental ability on behaviors ( $\rho=0.25$ ), cultural values seem to be relatively weaker predictors in this category ( $\rho=0.15$ ), individualism has a comparable effect on behaviors such as organizational citizenship ( $\rho=-0.21$ ), helpfulness ( $\rho=-0.20$ ), and conflict resolution styles (up to  $\rho=0.30$ ). Similarly, uncertainty avoidance is strongly but negatively related to innovation ( $\rho=-0.41$ ) and masculinity has a strong effect on conflict management preferences (up to  $\rho=0.58$ ,  $k=3$ ) and communication style (up to  $\rho=0.22$ ,  $k=3$ ).

In contrast, although compared to personality, general mental ability, and demographics, cultural values seem to be a stronger predictor of emotions, attitudes/perceptions, and behavior overall, there were some notable exceptions. For example, regardless of the dimension, cultural values were found to be overall only modestly related to outcomes in the organizational justice block (individualism  $\rho=-0.10$ , power distance  $\rho=0.14$ ; uncertainty avoidance  $\rho=0.08$ , masculinity  $\rho=0.10$ ). Similarly, the link was rather weak between individualism and such important organizational behaviors such as absenteeism ( $\rho=0.05$ ), turnover ( $\rho=0.05$ ), and effort ( $\rho=-0.11$ ) and attitudes such as leadership style preferences ( $\rho=0.00$  for transformational leadership; and  $\rho=-0.07$  for preference for intellectual input stimulation,  $k=3$ ) and for anxiety and depression (for

both  $\rho=-0.11$ ). Thus, for these organizationally relevant outcomes, our results demonstrate that individual attributes, especially personality and general mental ability, may be relatively stronger predictors than cultural values.

In summary, at the individual level of analysis, individualism has the strongest positive associations with avoiding unethical behavior ( $\rho=0.39$ ) and preference for paternalistic leadership ( $\rho=0.46$ ,  $k=3$ ); and the strongest negative associations with need for affiliation ( $\rho=-0.37$ ), concern for other's interests in conflict management ( $\rho=-0.37$ ), and embarrassability ( $\rho=-0.42$ ). Power distance has the strongest positive associations with continuance ( $\rho=0.30$ ) and normative organizational commitment ( $\rho=0.39$ ), preference for directive leadership ( $\rho=0.33$ ), and religiosity ( $\rho=0.36$ ); and the strongest negative associations with both avoiding unethical behavior ( $\rho=-0.38$ ) and feedback seeking ( $\rho=-0.26$ ,  $k=3$ ). Uncertainty avoidance had the strongest positive associations with team commitment ( $\rho=0.37$ ) and preference for directive leadership ( $\rho=0.36$ ); and the strongest negative associations with innovation ( $\rho=-0.41$ ) and preference for participative leadership ( $\rho=-0.25$ ). Finally, masculinity/femininity had the strongest positive associations with a preference for a compromise conflict management style ( $\rho=0.58$ ,  $k=3$ ) and social avoidance ( $\rho=0.55$ ,  $k=3$ ); and the strongest negative associations with a preference for an avoidance conflict management style ( $\rho=-0.36$ ,  $k=3$ ) and the value of individual equality ( $\rho=-0.44$ ,  $k=3$ ).

At the group level of analysis, individualism has the strongest positive association with a preference for a compromising conflict management style ( $\rho=0.19$ ,  $k=3$ ); and the strongest negative association with cooperation in groups ( $\rho=-0.39$ ). Cooperation in groups was also strongly positively related to both power distance ( $\rho=0.37$ ,  $k=2$ ) and uncertainty avoidance ( $\rho=0.37$ ,  $k=2$ ) and strongly negatively related to masculinity ( $\rho=-0.45$ ,  $k=2$ ).

At the country level of analysis, individualism has the strongest positive associations with innovation ( $\rho=0.65$ ,  $k=3$ ), wealth ( $\rho=0.70$ ), life satisfaction ( $\rho=0.64$ ), and income equality ( $\rho=0.64$ ); but the strongest negative associations with importance of family ( $\rho=-0.55$ ,  $k=3$ ) and corruption ( $\rho=-0.84$ ). Power distance has a strong positive association with corruption ( $\rho=0.83$ ) and agreeableness ( $\rho=0.46$ ,  $k=2$ ); but the strongest negative associations with openness to experience ( $\rho=-0.54$ ,  $k=2$ ) and income equality ( $\rho=-0.60$ ). Uncertainty avoidance had the strongest positive associations with neuroticism ( $\rho=0.59$ ) and corruption ( $\rho=0.43$ ); but the strongest negative associations with innovation ( $\rho=-0.45$ ,  $k=3$ ) and life satisfaction ( $\rho=-0.49$ ). Finally, masculinity had the strong positive associations with neuroticism ( $\rho=0.29$ ) and corruption ( $\rho=0.29$ ); but the strongest negative association with gender role equality ( $\rho=-0.50$ ,  $k=2$ ).

Turning to our hypotheses, consistent with Hypothesis 1 and using a series of correlation difference tests for independent samples ( $p < .01$ ), the relationship between cultural values and emotions was overall significantly stronger ( $\rho=0.27$ ) than that between cultural values and attitudes and perceptions ( $\rho=0.20$ ), behaviors ( $\rho=0.15$ ), or job performance ( $\rho=0.03$ ). Also, these results showed statistically stronger relationships for cultural values with attitudes/perceptions and behaviors than with job performance. Unfortunately, limited data availability on the effects of cultural values on emotions allowed for testing and confirming the hypothesis only for individualism. On the other hand, the hypothesized diminishing of relationship strength across bandwidth proximity held true, with the effect of cultural values being the strongest on attitudes and perceptions and weakest on performance along all four dimensions. The only exception was uncertainty avoidance, which correlated significantly stronger with behaviors ( $\rho=0.32$ ) than with attitudes ( $\rho=0.17$ ). However, this unexpected finding was largely determined by a very strong

relationship between uncertainty avoidance and innovativeness. As expected, the direct relationship between cultural values and performance was very close to zero for all dimensions, again with the exception of uncertainty avoidance ( $p=0.10$ ), which was still the weakest correlation for that dimension. Unfortunately, limited data availability for the group/organization and national levels made it impossible to conduct a meaningful comparison of the strength of the relationships between cultural values and specific outcomes.

#### *Moderators of Cultural Value Main Effects*

With our focus on main effects of cultural values, it is beyond the scope of the present study to provide a detailed analysis of the credibility intervals reported in Tables 2-4. However, a number of reported credibility intervals include zero suggesting limited generalizability of main effects and highlighting the need for moderator analyses. Due to data availability, the moderator analysis could only be meaningfully conducted for individual-level data. The data points representing unique outcomes that were excluded from the analysis of direct effects of cultural values (as they could not be grouped with any of the well-represented categories) were relevant for the moderator analysis and thus were used along with the rest of the data.

The theorized moderating effects were tested by evaluating the strength of the relationship between the moderators and the effect size of cultural values on different types of outcomes. Essentially, the moderator coefficients are the weighted average product-moment correlations between the moderator value and the absolute weighted correlation between cultural values and organizational outcomes. In other words, the dependent variable in our moderator analysis is the degree of correlation between culture and organizational outcomes. The results of the moderator analysis were highly consistent across different cultural values and types of

outcomes. Therefore, we provide only the overall results, as opposed to separate sets of moderator indices for each cultural value and type of outcome (see Table 6 for the results).

All moderation hypotheses regarding demographics were supported. For example, the effect of cultural values was found to be: significantly stronger for older, rather than younger, respondents ( $r=0.19$ ), supporting Hypothesis 2a; significantly weaker for students, rather than for managers and employees ( $r=-0.16$ ), supporting Hypothesis 2b; significantly stronger for men rather than women ( $r=0.23$ ), supporting Hypothesis 2c; and significantly stronger for those with more, rather than fewer, years of education ( $r=0.28$ ), supporting Hypothesis 2d.

The moderating effects of the data source was the strongest moderating effect found in our study ( $r=0.39$ ). Using cultural value scores from secondary data sources (i.e., Hofstede's, 1980a, national indices) is associated with less significant findings; and vice versa, using original data to quantify cultural values leads to stronger findings, supporting Hypothesis 3.

Finally, the moderating effect of cultural tightness-looseness (Gelfand et al., 2006) was tested using a mix of individual and national level data. National cultural tightness-looseness scores were taken from Gelfand et al. (2008b) and matched with the data in our meta-analytic dataset. A substantial portion of the studies in our dataset used multi-national samples and did not provide separate results for subsamples representing each country. In these cases, it was impossible to match cultural tightness-looseness scores with the coefficients of association between cultural values and outcomes. However, about a third of the studies reported findings for each country separately or used a uni-national research design allowing for matching data with the national scores for cultural tightness-looseness and testing the moderating effect of this construct. Consistent with Hypothesis 4, cultural values were found to have a significantly



stronger effect on outcomes in culturally tighter ( $r=0.28$ ), rather than looser, countries. Please see Table 7 for a summary of our findings.

## Discussion

Despite the publication of Hofstede's (1980a) original book almost 30 years ago and his updated book in 2001, to our knowledge, there has been no attempt to comprehensively, quantitatively assess the impact of the cultural value dimensions included in his framework. As a result, questions about the overall predictive power of Hofstede's cultural value dimensions and what factors might affect this power have gone largely unanswered. Thus, we attempted to quantitatively review a large number of empirical studies that have incorporated Hofstede's cultural value dimensions over the last three decades. The primary motivation for our study was two-fold and included a more accurate understanding of the: a) predictive power of the cultural values as main effects on organizationally relevant outcomes; and b) factors (i.e., moderators) that determine when cultural values matter most (Gibson et al., 2009). Below we discuss the implications of our review with a focus specifically on what we know now that we have analyzed almost 600 studies examining Hofstede's cultural value dimensions. We also discuss extensions to the only other comprehensive meta-analytic review of one of the cultural value dimensions contained in Hofstede's framework, individualism-collectivism, published over eight years ago (Oyserman et al., 2002).

### *Theoretical Implications*

Consistent with the theoretical framing in our introduction, the implications of our meta-analytic findings for theory can be categorized into those dealing with the predictive power of the cultural values as main effects and then the moderators of cultural value main effects.

*The predictive power of the cultural values as main effects on organizationally relevant outcomes.* Our first research question asked whether or not there were any significant differences in the predictive power of the four cultural values overall. The results demonstrated that, on the whole, there were very few statistically significant differences regarding the predictive power of the values at the individual level of analysis. Despite the overwhelming popularity of individualism-collectivism in previous research (Kirkman et al., 2006; Oyserman et al., 2002), our results showed that it did not have any meaningful predictive power differences compared to the other three values, and its overall predictive power was about average ( $p=0.18$ ). However, there was a substantially higher variation in predictive power at the group/organization and country levels of analysis. For example, individualism was found to be the weakest predictor at the group/organization level of analysis, and power distance was almost as strong a predictor as individualism at the national level. This finding must be tempered, however, by the limited data availability for the analyses at these aggregate levels.

Our findings support recent researcher calls to incorporate a wider array of cultural values beyond individualism-collectivism in their cross-cultural organizational behavior and psychology studies (Earley & Gibson, 1998; Gelfand et al., 2007; Kirkman et al., 2006; Tsui et al., 2007). Of course, such choices must be theoretically driven by what researchers attempt to predict. However, we have empirically demonstrated that, overall, there is no reason to believe that individualism-collectivism will be a stronger predictor than other cultural values for most outcomes and that the cultural values have similar predictive power, at least at the individual level of analysis.

Our second research question involved the comparison of the predictive power of the cultural values versus that of other individual level attributes such as personality traits, general

mental ability, and demographics on organizationally relevant outcomes. As stated in our introduction, in their qualitative review, Kirkman et al. (2006) noted that the cultural values in general explained low amounts of variance in outcomes. Indeed, the overall absolute average effect size for cultural values of  $p=0.18$  at the individual level of analysis can be characterized as relatively low using Cohen and Cohen's (1983) effect size heuristic. Over 20 years ago, a meta-analysis of the job satisfaction-performance relationship yielded almost the same effect size (i.e., average uncorrected weighted meta-analytic correlation of .17), leading researchers to conclude that the relationship was an "illusory correlation" (Iaffaldano & Muchinsky, 1985, p. 269; see Judge, Thoresen, Bono, & Patton, 2001, for an updated meta-analytic examination of this relationship).

With an overall absolute effect size of 0.18, the question must be asked whether it is time to abandon research on cultural values as explanatory mechanisms for organizationally relevant outcomes. Has the time truly come to "expand beyond using culture as meaningful differentiators" of outcomes (Tsui et al., 2007, p. 464)? Are cultural values too broad and the approach to studying them too deterministic to be useful in future research? If our meta-analytic review had stopped with examining the overall effect size for cultural values, then the answer would most likely be "yes." However, given our comparison of effects sizes to other individual predictors of employee outcomes and our examination of moderating factors, this conclusion is overly simplistic and premature.

For example, our results showed that the amounts of variance explained by cultural values are as much (and sometimes more) than that explained by individual differences such as the Big Five personality traits (e.g., Barrick & Mount, 1991), demographics (e.g., Eagly & Karau, 1991), and general mental ability (e.g., Hunter & Schmidt, 1998) with respect to specific

outcomes. Specifically, while cultural values explained relatively low amounts of variance in outcomes such as job performance, absenteeism, and turnover, relatively larger effects sizes were detected for outcomes such as organizational commitment, organizational citizenship behavior, organizational identification, team-related attitudes and perceptions, receptivity to certain leadership styles, and feedback seeking. Researchers interested in better understanding variance in certain employee outcomes now have evidence that cultural values are just as meaningful explanatory factors as are other individual differences such as personality traits, demographics, or general mental ability.

Another reason that the predictive power of the cultural values is relatively low in general might be due to the theoretical contention that power is typically enhanced when the bandwidth of predictors and criteria are matched (Campbell, 1990). Since values are considered broad tendencies (Rokeach, 1973), they may be ill-suited to predict very specific behavioral or attitudinal outcomes at the individual level. Thus, predictive power may be enhanced when researchers better match the bandwidth of cultural values and outcomes. We theoretically argued that cultural values would have stronger predictive power for relatively broader outcomes like emotions compared to work-related attitudes and perceptions, behaviors, and job performance. Indeed, the relationship between cultural values and emotions was stronger compared to the other outcomes for three of the four dimensions (uncertainty avoidance had a smaller number of studies, thereby clouding the results). Also, in line with the value-attitude-behavior hierarchy framework (Homer & Kahle, 1988), our meta-analytic results support the notion that values are more proximally related to attitudes and perceptions than to behaviors and more proximally related to behaviors rather than job performance. Thus, differential predictive power is also likely related to the proximal-distal nature of outcomes.

*Moderators of cultural value effects.* Another major purpose of our meta-analysis was to examine several theoretically supported moderators of cultural value effects to determine whether or not the predictive power of the cultural values depend on various contingency factors. Gelfand, Leslie and Fehr (2008) identify the examination of moderators of cultural value effects as one of the major needs in the cross-cultural psychology and organizational behavior fields. We examined several demographic variables including: the nature of the sample (managers/employees vs. students) and respondent age, sex, and years of education. As we theoretically argued, the predictive power of the cultural values was stronger for managers/employees compared to students, older versus younger respondents, males rather than females, and those with more education. Thus, these factors could be viewed as cultural amplifiers (Gelfand et al., 2008a), strengthening the effects of cultural values. Our findings extend the conclusions of Oyserman et al. (2002), who found larger effect sizes for individualism for working adults versus students when comparing Japanese and U.S. data sets. However, the authors were unable to consider other moderators and values due to a lack of sample size and, again, their sole focus on individualism-collectivism. Thus, we provide the first comprehensive quantitative examination of demographic moderators of all four of Hofstede's (1980a) original cultural values.

Our finding significant effects for various demographic moderators has several implications for cross-cultural researchers. First, demographic moderators might help explain why researchers may find significant effects for cultural values for a specific outcome in one study and fail to find such effects in another. If, for example, a particular sample is composed of primarily younger respondents who are female and in college (i.e., typical sample characteristics of the many studies that used undergraduate psychology students), the results of testing cultural

value effects are likely to be much more conservative compared to a sample of older, male, working managers. Thus, researchers should always evaluate their cultural value findings in relation to the nature of their samples. Second, our findings for sex differences reinforces previous research that has found stronger linkages between individual norms and work-related outcomes for men compared to women (Farh et al., 1997; Lee et al., 2000) and other research that has argued for differences in socialization and self-identity processes across gender (Gilligan, 1982).

Another moderator that we argued would affect the predictive power of cultural values is the source of the data used. As discussed, existing studies of cultural values used either primary data in the form of surveys collected from actual respondents or secondary data based on assignment of country scores to study participants. In line with our prediction, we found that the predictive power of the cultural values was higher for studies using primary, compared to secondary, data. Assigning country scores to individuals amounts to taking country level cultural value measure operationalizations and trying to fit them into individual or group/organizational studies. Again, our findings suggest that this should be avoided. One exception was for studies that assigned country scores for nation-level studies. However, this represents a closer match between theory and operationalization of cultural values at the country level of analysis.

Another theoretically supported moderator of cultural value effects was the construct of cultural tightness-looseness. Gelfand et al. (2006) argued that variance in cultural values would be lower in tighter versus looser societies. Based on their line of reasoning, we argued that individuals in culturally tighter societies would have much less flexibility in the expression of their cultural values and outcomes, and thus there would be a stronger relationship between cultural values and outcomes in culturally tighter, rather than looser, societies. As predicted, our

meta-analytic results supported this argument. To our knowledge, we are the first to empirically verify the theoretical arguments of Gelfand et al. (2006) and extend them to relationships involving Hofstede's (1980a) cultural value dimensions. Thus, in addition to demographics and data source, researchers will need to interpret their findings for cultural values in light of the cultural tightness-looseness of the countries in which their samples originate (Leung & Ang, 2009). Our meta-analytic findings might also address conflicting findings in previous qualitative reviews (Gelfand et al., 2007; Tsui et al., 2007). For example, Kirkman et al. (2006) found that in the few studies that examined the same relationships involving cultural values in different countries, the effects are often different and sometimes contradictory. The cultural tightness-looseness findings in our study might help researchers interpret these differences.

### *Managerial Implications*

Taking into account the number of managers worldwide who have been exposed to Hofstede's (1980a) cultural value framework over the last 30 years in universities and executive education settings, we believe our findings will be of interest to those who wish to fine tune their efforts to use cultural value differences to better understand employee outcomes. For example, the use of personality instruments and other individual difference indicators has been increasing over the last two decades as human resource managers attempt to better use individual differences to more accurately select and promote employees in organizations. Our finding that cultural values are just as robust as personality traits and demographics in predicting certain individual outcomes (e.g., organizational commitment, identification, and citizenship behaviors; team-related attitudes and perceptions; feedback-seeking behavior) may suggest potential use in employee selection systems. However, more work is needed in this area as very little research has actually examined cultural values specifically in employee selection settings.

Second, our examination of moderators also has implications for managers wishing to better understand when cultural values matter most (Gibson et al., 2009). For example, the predictive power of cultural values is higher for managers/employees versus students, which should strengthen managers' confidence in using cultural values as predictors. Cultural values also have stronger effects for respondents who are older, rather than younger, and male, rather than female and for those with more years of education. While managers should clearly avoid the use of cultural value measures as selection or promotion tools only for certain groups, these findings at least give managers some understanding of when cultural values may matter most. Specifically, our results suggest that managers should have more confidence using cultural value measures when certain emotional responses, beliefs, and attitudes are critical to the position. Furthermore, culture-focused selection tools may work better for older, male, and more educated respondents. Our finding that primary versus secondary data yielded higher predictive power for the cultural values should warn managers not to rely on country scores but to survey their employees to determine their individual cultural value profiles. Finally, our findings for cultural tightness-looseness will also help managers determine when to attend more to cultural values. When managers operate in culturally tighter societies such as Pakistan, Malaysia, India, or Singapore, assessing employees' cultural values will likely yield more precise predictions for employee outcomes. In contrast, managers in culturally looser countries such as the U.S., Israel, Hungary or Ukraine may wish to supplement their cultural value measures with other important individual difference predictors.

### *Limitations*

The major limitation of the present meta-analysis is commensurability because there is always tension between size and method variance. As researchers become more inclusive, they



are rewarded with larger, more complete datasets, but are penalized for having less precise constructs. We aimed to err conservatively, that is, to exclude studies except those that were extremely similar, but a case can be made for different standards. For example, the World Database of Happiness has been aggregated in a variety of ways (Diener, Diener, & Diener, 1995; Steel & Ones, 2002; Veenhoven, 1993), which leads each researcher to make slightly different decisions regarding commensurability (though they did all generate very similar results).

Second, our dataset, albeit fairly large, does not represent each data category equally well. As noted earlier, we had quite a few datasets describing the effects of individualism. Unfortunately, the other three cultural values were not as well represented. Similarly, certain types of outcomes have been studied much more extensively, while others received limited attention. As a result, the effects of cultural values on some of the outcomes were represented by many data points, while the opposite was true for others. In some cases, we could only draw limited conclusions for certain levels of analysis or cultural values because not enough research has been conducted. This presents an opportunity for researchers to fill in the gaps in these neglected areas. Therefore, the comparison of effects across cultural values and outcome types that were inconsistently represented in our meta-analytic dataset should be interpreted with caution.

Third, our meta-analysis does not completely incorporate country differences that might account for differences in predictive power across nations. For example, we included individualism scores in our dataset regardless of the country in which they were obtained. Due to country differences, it is likely that someone from the U.S. who has the exact same score on individualism as someone from China will not behave in exactly the same manner due to their different country contexts. We obtained some support for this contention by finding significant moderating effects of cultural tightness-looseness. However, future research will need to

incorporate other country level factors that might account for differences in how cultural values affect outcomes across countries.

Fourth, a small portion of studies included in our meta-analytic sample used secondary data, such as Hofstede's (1980a) national cultural indices, to operationalize culture at the individual level of analysis. Our moderator analysis showed that using secondary data significantly lowers the reported effect size. Even though the percentage of secondary data studies in our sample was extremely low and it was unlikely that they had a detectable effect on our results, it is still possible that our findings slightly underestimates the true relationship between culture and the outcomes we examined, at least at the individual level.

Finally, because the meta-analytic approach requires commensurability of methodology across all studies included in the pool, we had no choice but to exclude any empirical research that relied on culture frameworks other than Hofstede's (e.g., Kluckhohn & Strodtbeck, 1973; Schwartz, 1994; Smith, Dugan, & Trompenaars, 1996). By doing so, we potentially subjected our meta-analytic results to validity threats as Hofstede's approach has a number of conceptual and methodological limitations that can contaminate data and introduce a systematic error. Taras and Steel (2009) provide a detailed review of likely deficiencies of Hofstede's approach to quantifying culture. Thus, we provide only a brief summary of the most relevant points here.

In terms of conceptualization of culture, Hofstede's (1980a) multi-dimensional model may not adequately capture the complete phenomenon of culture because a singular focus on cultural values largely ignores other aspects of culture. Furthermore, both at the individual and national levels, culture may not be as stable as Hofstede believed it was. In terms of his methodology, geography may not be the best way to cluster culture, and nations may not be the best units of analysis. Matched sampling, as used in Hofstede's IBM study, may be appropriate

for capturing some of, but not all, cultural differences between populations. The focus on cultural means and national rankings greatly limits how we see cultural differences between cultural entities. Finally, self-response questionnaires may be a suboptimal way to gather culture survey data as self-reports are influenced by personal biases and motivations, differences in understanding of questions and points of reference, and most importantly, differences in response styles and the ways in which people respond to Likert-type scales (Harzing, 2006; Smith, 2004).

We acknowledge that because all studies in our meta-analytic sample used Hofstede's (1980a) approach to viewing and operationalizing culture, this does limit the generalizability of our findings. To ensure commensurability, one of the most important conditions of a good meta-analysis, we selected only studies that utilized Hofstede's approach. Thus, our sample is subject to the same limitations and threats to validity as Hofstede's original study. To be fair, this is a criticism that can be leveled at any meta-analysis focused around a single measure or methodology as it necessarily maintains specific method variance (Kenny, 1995). Still, if newer culture measurement tools, such as those offered by the GLOBE team (House et al., 2004), gain wider acceptance and the body of empirical literature based on these models grow, a meta-analysis of culture's consequences based on an alternative framework becomes an inviting possibility. For now, Hofstede's model is the only one that has been used in a substantive number of independent studies allowing for a high-quality meta-analysis.

### *Future Directions*

We organize our directions for future research into three categories including: conceptual, measurement, and sampling/research design issues. We also discuss the continuing relevance of Hofstede's (1980a; 2001) framework in each of these respective areas including: the overall five dimension framework itself (i.e., conceptual); Hofstede's VSM measures (i.e., measurement);

and the country scores/rankings obtained in the late 1960s and early 1970s (i.e., sampling/research design). We do not attempt to provide a comprehensive critique of Hofstede's framework or methodology (e.g., see Ailon, 2008, McSweeney, 2002); nevertheless, we do make several recommendations for scholars wishing to use Hofstede's framework with improved precision in future research.

*Conceptual directions and recommendations.* In addition to the question of the continued use of cultural values, in general, as explanatory mechanisms for organizationally relevant outcomes (discussed in the Theoretical Implications section above), one must also ask whether or not Hofstede's (1980a; 2001) framework, specifically, has continued relevance for future research. One (albeit not perfect) way to answer this question is to examine competing frameworks and determine the degree of conceptual overlap between them. While a detailed analysis of the various frameworks is beyond our scope here, in a recent review of six major cultural value frameworks (i.e., Hall, 1990; Hofstede, 1980a; House et al., 2004; Kluckhohn & Strodtbeck, 1973; Schwartz, 1994; Trompenaars, 1993), Nardon and Steers (2009) collapsed the many cultural value dimensions found in them into five core cultural dimensions including: hierarchy vs. equality, individualism vs. collectivism, mastery vs. harmony, monochronism vs. polychronism, and universalism vs. particularism. While not a perfect correspondence with Hofstede's five dimensions, several are identical or highly similar (e.g., individualism-collectivism is identical while hierarchy-equality is similar to power distance and monochronism vs. polychronism is similar to long term vs. short term orientation). There are also elements of mastery vs. harmony in Hofstede's masculinity vs. femininity dimension and universalism-particularism in uncertainty avoidance. In conjunction with our meta-analytic findings, we strongly believe that the continued examination of individualism-collectivism, power distance, uncertainty avoidance, and

masculinity-femininity is certainly warranted if relevant to one's theoretical question of interest and if using national dimensions of culture are suitable for one's research program.

Given our and others' belief that Hofstede's (1980a; 2001) framework will continue to add value to the cross-cultural organizational behavior and psychology literature, our meta-analysis provides a complementary, quantitative perspective to the qualitative review of Kirkman et al. (2006) and provides direction for future research that their review could not. For example, our meta-analysis identified a number of research opportunities for Hofstede's cultural value dimensions. As our review showed, individualism-collectivism has been the most popular cultural dimension in cross-cultural studies. Very few studies in our sample excluded individualism from their analysis. However, as our meta-analytic findings suggest there is no viable reason to believe that individualism is the best predictor of organizational behavior and other outcomes. In fact, its predictive power may be comparatively weak for some types of outcomes. Unfortunately, with the focus on individualism, the other cultural value dimensions have remained relatively underexplored. As represented by the differences in data availability on the various cultural dimensions, the number of studies that explored the other dimensions is only one-tenth to one-fifth of those that addressed issues related to individualism.

In addition to identifying areas where Hofstede's (1980a; 2001) model has been used extensively, our meta-analytic review also identified additional avenues for future research by identifying where use of the model has been limited. For example, our meta-analysis did not allow for any examination of mediators of cultural value effects because they have rarely been studied. Thus, we have little understanding as to the underlying theoretical mechanisms by which cultural values relate to outcomes (Kirkman et al., 2006). Our finding that cultural values are more strongly related to attitudes compared to behaviors suggests that cultural value-behavior

relationships may be mediated by attitudes. Indeed, similar to recommendations in the personality literature (Barrick, Mount, & Judge, 2001), researchers may benefit from exploring process models of cultural value effects. For example, Van Dyne, Vandewalle, Kostova, Latham, and Cummings (2000) found that organization-based self-esteem mediated the relationship between collectivism and organizational citizenship behavior, and both cooperation (Eby & Dobbins, 1997) and resistance to teamwork (Kirkman & Shapiro, 2001) mediated the relationship between collectivism and team performance. Finding theoretically relevant mediators may help to improve the predictive power of the cultural values on more distal outcomes.

In addition to mediators, we did not analyze cultural values as moderators in our study. In order to include cultural values as moderators in our meta-analytic review, we would need a sufficient number of studies that examined moderating effects on identical relationships. For example, in order to understand the effects of cultural values as moderators on the job satisfaction-performance relationship, we would need a large number of studies examining this specific relationship. Unfortunately, there are too few studies of this type to undertake such a meta-analytic examination at the current time. However, we hope that with Hofstede-inspired research continuing to expand exponentially, such an investigation may be possible in the near future.

Since we represent one of the first attempts to comprehensively analyze the effects of Hofstede's (1980a; 2001) cultural value dimensions meta-analytically, we kept our research questions and hypotheses intentionally general. That is, our purpose was not to make any predictions about relationships between specific cultural value dimensions and specific outcomes, but rather to take a higher level overview of Hofstede's cultural value effects. Of

course, our results do allow researchers to examine these more specific relationships using our detailed tables, such as the finding that individualism-collectivism typically has stronger effects on attitudes and behaviors related to groups than the other values. However, we believe that the large amount of research that has been conducted using Hofstede's cultural value dimensions does present interesting opportunities for researchers to pursue more fine-grained research questions and theoretical predictions. Future research could parallel that of the Big Five personality traits showing that specific personality traits affect certain employee outcomes more strongly than others (Barrick & Mount, 1991), as some of our cultural value findings already indicate. Such investigations will only improve the precision and utility of incorporating Hofstede's values in predicting important organizationally relevant outcomes.

Finally, culture is a multi-layered construct represented by values, assumptions, rituals, behaviors, and artifacts. Hofstede (1980a) argued that culture is best (or even completely) understood by assessing individuals' values (Javidan et al., 2006, refer to this as the *ecological values assumption*). Researchers are now questioning this assumption (Earley, 2006), particularly those in the GLOBE project who measured culture both as the values of their respondents (i.e., the "should be" dimension) but also their perceptions of the ways in which people in a culture actually deal with collective challenges (i.e., the "actually is" dimension; Javidan et al., 2006). Similarly, Leung and Bond (2004) conceptualize culture with social axioms, or people's beliefs rather than their values. As Taras and Steel (2009) note, equating culture with values has been commonly taken as the first "testament" for cross-cultural research, while in reality, culture is a much more complex construct with values representing only one facet. Other aspects of culture may predict outcomes differently than, or explain unique variance beyond, value-based measures. While we do believe that values will still play a central role in

understanding culture's overall effects (as our meta-analytic findings demonstrate), we also believe that expanding the examination of cultural effects beyond values is a promising next step in cross-cultural research.

*Measurement directions and recommendations.* Beyond the conceptual utility of Hofstede's (1980a; 2001) specific five-dimension framework, one must also ask whether or not Hofstede's actual VSM measures should continue to be used in future research. While national culture is clearly intended to be a property of nations or countries, cultural values themselves reside within, and are exhibited by, individuals. Individual cultural values are shaped by both a culture's shared meaning system and each individual's unique personality (Chao, 2000). Thus, national culture is an emergent phenomenon emanating from the shared values of a country's residents, which assumes that cultural value constructs share the same content, meaning, and construct validity across levels (Kozlowski & Klein, 2000).

Despite Hofstede's (1980a; 2001) strong statements that his instrument was developed for, and was to be used exclusively at, the national level of analysis, there are doubts about the level of analysis to which the instrument actually corresponds. For example, many of Hofstede's survey questions inquire about *personal issues* and *preferences* (i.e., the use of the referents "I" and "me" rather than societal level referents; see Javidan et al., 2006, for this critique). In addition, the replication of Hofstede's framework by Spector, Cooper, and Sparks (2001) showed that Hofstede's model and VSM did not show noticeably better psychometric characteristics and cleaner factor structures when analyzed using aggregated ecological level data compared to analyses using individual level responses. Finally, Hofstede (2001) provided a lengthy list of correlations between his value scores and numerous theoretically-relevant national level constructs. However, we found no differences in the effect sizes for studies using Hofstede's



VSM compared to other individual level measures for organizationally relevant outcomes. Ironically, our findings, coupled with previous critiques that Hofstede's VSM is not a purely nation level measure, may mean that his VSM is actually more valid at the individual level, rather than the nation level. As it stands, determining what level to apply Hofstede's VSM, individual or national or both, needs to be more systematically addressed. Chen, Mathieu, and Bliese (2004) describe five steps required for conducting multi-level construct validation. Pooling what has been done and filling in any gaps in these steps is the logical next step to better address this issue.

For researchers wishing to focus exclusively at the individual level of analysis, there are valid and reliable measures in the existing literature, some of which may be superior to Hofstede's (1980a; 2001) for several reasons. For example, regarding collectivism, Jackson, Colquitt, Wesson, and Zapata-Phelan (2006) recently developed a measure of *psychological collectivism*, which they conceptualized as multidimensional with five facets including: preference for in-groups, reliance on in-groups, concern for in-groups, acceptance of in-group norms, and prioritization of in-group goals (see an alternative multi-faceted measure of individualism-collectivism in Triandis, Leung, Villareal, & Clack, 1985). These multi-faceted views of individualism and collectivism are a response to critiques highlighting lower than desired reliability for previous holistic measures, including Hofstede's (Earley & Gibson, 1998; Oyserman et al., 2002). Jackson et al. (2006) also noted that their measure contains items that are more work context focused compared to other more general collectivism measures such as Hofstede's, and thus they may have more predictive power for work-related outcomes. Their measure will need cross-cultural validation, of course, before widespread use in countries worldwide.

In addition to collectivism, Earley and Erez's (1997) individual level power distance measure has been used with good reliability in a variety of cross-cultural studies (Brockner et al., 2001; Earley, 1999; Kim & Leung, 2007). To avoid level of analysis confusion, Kirkman, Chen, Farh, Chen, and Lowe (2009) refer to this construct as *power distance orientation*, finding that it moderated the cross-level relationship between group-level transformational leadership and individual level procedural justice perceptions in both China and the U.S. Importantly, the authors found no country level differences with regard to the moderating effects of power distance, supporting the importance of examining individual variations in cultural values in addition to country level variation to understand people's reactions to work-related practices. While uncertainty avoidance and masculinity-femininity have received much less attention with regard to individual level measures, examples can be found in Dorfman and Howell (1988).

One of the next frontiers in the measurement of cultural values at the individual level may be a continuation of the development of facets of each of the dimensions, similar to Jackson et al.'s (2006) psychological collectivism measure. For example, regarding the masculinity-femininity dimension, masculine values include aspects such as assertiveness and the acquisition of money and things but also separate values concerning gender roles in organizations (Hofstede, 2006). These sub-facets could feasibly predict different types of outcomes (e.g., House et al., 2004, separated gender egalitarianism and assertiveness at the national level). Ailon (2008) argues that there are different aspects of power distance including boss/subordinate, researcher/research objects, within/between groups, and within/between states and that Hofstede's (1980a) conceptualization included only one type (i.e., boss/subordinate). Similarly in the personality literature, research on the Big Five personality traits has shown enhanced precision and predictive power for certain outcomes when sub-facets of the Big Five dimensions

are used (Barrick et al., 2001). Of course, as discussed, issues of matching bandwidth will be relevant here. Therefore, as Jackson et al. (2006) note, cultural value measures tailored to specific aspects of work and outcomes will be superior to more general cultural value measures.

Finally, as Javidan et al. (2006) discussed, Hofstede's cultural scores are based on a *summary index* of personal questions (i.e., using the referents "I" and "me"). In comparison, the GLOBE team used *referent-shift* questions (i.e., based on societal level referents). Though Javidan et al. argue that theirs is a superior methodology, there is still no clear answer about the superiority of either approach or any other approaches. Chen et al. (2004) described six different models for creating aggregate constructs: selected score, summary index, consensus, referent-shift, dispersion, and aggregate models (for more details and alternative classification of aggregation methods, see also Kozlowski and Klein, 2000). Exploring the other four aggregate construct models to operationalize culture is likely to be a promising venue for future research.

*Sampling and research design directions and recommendations.* Beyond assessing the continued use of Hofstede's (1980a; 2001) framework and his actual VSM measures, one question integral to cross-cultural research sampling and design is whether or not to continue to use his country scores/rankings in future research. First, numerous studies have shown that culture may be changing much faster than previously believed at both national and individual levels (Olivas-Luján, Harzing & McCoy, 2004; Ralston, et al., 2006; Rokeach, 1989). Thus, using country scores from the 1960s and 1970s are likely to severely limit accuracy of estimates. Second, it has been traditionally assumed that cultures are contained within countries and countries represent cultural groups. Yet, geography may not be the best dimension for clustering culture. Globalization is making studies of cultural values of certain countries or even regions less useful, and future research may be more meaningful if focused on cultural values of age

groups, socio-economic classes, or professional communities. Finally, less than two percent of studies in our sample reported statistics on dispersion of cultural values within samples. While culture means do provide important information about cultural values in a group, this statistic is too limited as it ignores the nature of the distribution of values within the group and provides basically meaningless information in cases of bi-modal, severely skewed or otherwise non-normal distributions. We strongly encourage future research to look beyond means (i.e., country scores) when analyzing the effect of culture on organizational processes and outcomes.

Beyond the issue of using Hofstede's (1980a) country scores, since this meta-analysis confirmed that sample composition can affect the results of examining cultural value effects, choice of sample is not a trivial issue. At an extreme, for example, Steel and Ones (2002) found that more conscientious countries tend to be economically poorer than less conscientious ones, a counterintuitive result that they attributed to using an undergraduate student sample (i.e., people in poorer countries must be more conscientious to be accepted into universities). Sample choice can significantly affect results and should be more carefully considered in future studies. Clearly, this goes beyond just choosing samples representative of the general population. It would also be interesting to determine whether and/or which subcultures of a country are most influential in determining key characteristics or behaviors, such as public policy. As Taras et al. (2009) suggested, top managers, though less representative of the overall population, "may be more predictive on many relationships due to the concentration of power (e.g., foreign policy, health care mechanisms)" (p. 60).

One observation that we have made based on our extensive literature search through numerous psychology, management, and sociology publication outlets was that culture has been operationalized virtually exclusively via self-response, Likert-type questionnaires. Numerous

studies have shown the limitations of self-response data in general and in cross-cultural contexts in particular. The most common concerns relate to cross-cultural differences in acquiescence bias (i.e., the tendency to agree with the statements in survey items), the tendency to choose middle or extreme points on the scale, differences in the interpretation of relative strength associated with scale anchors, inclinations to socially-desirable response style, and effects of language of the survey or responses (for more details see Harzing, 2005, 2006; Hui & Triandis, 1989; Johnson et al., 2005). Methods for eliminating the effects of such response styles have been suggested and used in cross-cultural research, but unfortunately, they are not without limitations (for a review, see Smith, 2004). Though better survey design will help to reduce some of these systematic and nonsystematic sources of error, the self-assessment of culture will continue to be tainted by these and other method variance factors, including many of the same issues that affect similar forms of self-reports such as personality (Taras & Steel, 2009; Taras et al., 2009). The question is simply to what degree.

More success in eliminating method variance may come from improved research designs rather than relying on better survey designs alone. In particular, culture research would benefit by sampling the respondent over several separate time periods, ideally at least three points in time (Kammeyer-Mueller, Steel, & Rubenstein, in press). This would enable the researcher to factor out temporary person-level effects (e.g., bad mood) or group-level effects (e.g., seasonal or business cycles), depending on the particular emphasis and allow for better assessment of the underlying cultural constructs. This type of analysis can be easily incorporated into hierarchical linear modeling, a multi-level research design that arguably should be seen far more often in cultural research.

In addition, self-response surveys in cross-cultural research may be problematic when they ask to evaluate group cultures. For example, the GLOBE survey asks participants to evaluate the extent of various phenomena “in this country” (House et al., 2004). Not only might the respondents have limited information and skills to make a credible judgment about the group’s culture, but their answers may also be affected by their subjective points of reference (Hofstede, 2006). For example, even though Canada may be a highly individualistic country compared to the world’s average, respondents in Canada may rate their society as more collectivistic as they may be using the even more individualistic U.S. as a point of reference. Determining the accuracy of such judgments is an issue long considered by personality psychologists, particularly by Funder (1995). Future cultural research should consider drawing upon his Realistic Accuracy Model, which identifies moderators of accuracy. Moderators indicate that some are better at making cultural judgments than others and some cultural dimensions are easier to assess than others.

Regarding issues of multi-level culture research, although culture is an inherently multi-level construct, our review also revealed that despite considerable progress in the development of multi-level theories and data analysis techniques, there are no culture studies in our sample that attempted to bridge these levels of analysis. The very few exceptions we could find were either integrative literature reviews (e.g., Kirkman et al., 2006), conceptual models (Fischer, Ferreira, Assmar et al., 2005), methodology development pieces (Cheung & Au, 2005) or studies that used secondary data to explain the phenomenon of culture (Steel & Taras, forthcoming), all published within the past few years.

The lack of multi-level empirical studies in culture research is likely rooted in the traditionally apprehensive attitude toward cross-level generalizations in cross-cultural studies.

The controversy surrounding multi-level research can be traced back to Hofstede, who repeatedly warned scholars about the possibility of ecological fallacy when generalizing his findings and model across levels (e.g., Hofstede, 1995, 2001; Hofstede, 2002). His frequent warnings against cross-level generalizations of his specific data seem to have formed a perception that any cross-level analysis would lead to ecological fallacy and thus is taboo in cross-cultural research (Taras & Steel, 2009). As a result, the multi-level research on culture has been effectively curtailed to discussions on whether existing models of culture, such as those offered by Hofstede (1980a), generalize across levels of measurement or not.

Since originally explained by Thorndike (1939) and later popularized by Robinson (1950), no one questions that ecological fallacy is a valid concern. Indeed, generalizing findings obtained with individual data to the national level and vice versa (i.e., generalizing findings obtained with country-level data to explain individual-level processes) can lead to misleading results. However, multi-level models and analysis does not necessarily lead to ecological fallacy and if developed and applied properly can actually provide very meaningful and useful results.

We have progressed considerably since Robinson (1950), whose own example, ironically, was shown to represent a model specification problem and not an ecological fallacy at all (Hanushek, Jackson, & Kain, 1974). As noted by Jargowky (2004, p. 721), “the ‘ecological fallacy’ has lost some of its sting, and should not cause researchers to abandon aggregate data.” Moreover, more often than not ecological inference is the preferred way to study a complex phenomenon, which culture indisputably is. A proper simultaneous analysis of data representing different levels of measurement opens new frontiers and allows for addressing questions that could not be answered with a single-level approach. Chen and colleagues (2004, 2005) provide detailed instructions for validating multi-level constructs and testing cross-level homology of

theories. Recent progress in data analysis techniques, such as HLM (Raudenbush & Bryk, 2002), has offered many great tools for cross-level studies and we encourage future research to make more use them. Furthermore, a related and particularly interesting question is the continued exploration of how cultural homogeneity relates to individual level associations. Teams, for example, tend to benefit from group similarity, despite some of these traits having negligible individual level effects (Peeters, van Tuigl, Rutte, & Reymen, 2006). The cultural field would benefit from showing similar interest in not only how effects reflect, reverse or strengthen as we move from one level of aggregation to another but also why. Please see Table 8 for a summary of our future research directions.

In keeping with our recommendations to conduct more multi-level culture research, we provide an example framework for one possible research program in Figure 1. Note that our model is not comprehensive but, rather, focuses on the individual level of analysis as the primary level of concern. Similar models could be constructed with either the group/organizational level or country level as the primary level of focus. The model is also not intended to provide an exhaustive list of all possible mediators or moderators of individual level cultural value effects; rather it is offered to highlight the types of constructs that hold promise for better understanding the way cultural values affect important individual outcomes. The model is consistent with our meta-analytic findings that individual level cultural values affect emotions, attitudes, and perceptions more strongly than behaviors and, in turn, behaviors more strongly than job performance. As we have stated, cultural beliefs may help to explain aspects of culture not captured by cultural values. Thus, we include both as predictors in our model and note that they are likely to have reciprocal relationships with one another. Also, as we have stated, an area of great promise for future research is an examination of possible mediators of cultural value (and



belief) effects. Thus, we highlight affect, attitudes, perceptions, and cognitive schema as possible mediators of cultural belief/value effects on behavior, and consequently, job performance. Our model also shows that cultural beliefs/values can also moderate relationships between individual level facets such as attitudes and perceptions and behavior and between behavior and job performance. Kirkman et al.'s (2006) qualitative review demonstrated that examining cultural values as moderators continues to be an active and meaningful research stream.

Another promising avenue for future research highlighted by our model is an examination of moderators of cultural belief/value effects (Gelfand et al., 2008a), including moderators at the individual, group/organizational, and nation levels. For example, to our knowledge, at the individual level, the interactive effects of cultural values and personality traits have rarely been examined empirically (Kirkman et al., 2006). Cultural effects may be less powerful when one is higher, rather than lower, on personality traits such as extraversion or openness to experience because these personality types are more likely to be socially adaptable, or more likely to change their values to fit the social setting in which they find themselves at any given time (Gibson et al., 1999).

Examining moderating effects at higher levels of analysis would necessitate the use of a multi-level approach (Chao, 2000; Kozlowski & Klein, 2000). For example, the predictive power of cultural values might be affected by characteristics of the workgroup to which one belongs. If, for example, members belong to a highly cohesive workgroup or one with which they strongly identify, cultural values might have weaker effects on outcomes compared to the values of the group, particularly if these values diverge (Gibson et al., 2009). At the organizational level, Chatman and Barsade (1995) found that individualistic-collectivistic organizational culture moderated the relationship between individually-held cultural values and cooperative behavior,

demonstrating cross-level moderating effects of organizational values on individual cultural value effects. At the nation level, our meta-analysis showed that cultural tightness-looseness affected the strength of the predictive power of cultural values. Other nation level factors such as wealth, well-being, and the pace of cultural change could also feasibly influence the strength or direction of cultural value effects for particular outcomes. A simultaneous examination of nation level cultural value dimensions and individual level cultural value effects could uncover potentially interesting cross-level cultural value interaction effects, similar to Chatman and Barsade's (1995) work at the organizational and individual levels.

Of course, our model could be expanded considerably beyond its present scope, particularly with regard to adding mediators and moderators and moving beyond the primary focus of the effects of individual level cultural beliefs/values. We hope this model begins to stimulate the next generation of what is sure to be an exciting continuation of interesting and impactful cultural value research.

### *Conclusion*

We attempted to bring a more quantitative lens to the empirical research that has been conducted using Hofstede's (1980a; 2001) cultural value framework over the last three decades. Our results revealed that cultural values can predict certain organizational and employee outcomes similar to, or even stronger than, other individual differences such as personality traits. We also found that the predictive power of cultural values depends on such contingency factors as demographic characteristics, primary versus secondary data, and the cultural tightness-looseness of the countries in which the data are collected. Our findings should not only help researchers interpret previous mixed findings in the literature, but also help make better sense of their findings when using Hofstede's framework moving forward. Clearly, research using

Hofstede's framework shows no sign of abating. It is only by better understanding how much and when cultural values make a difference in employee outcomes that Hofstede's framework can be optimally used in cross-cultural organizational behavior and psychology research.

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\* Studies included in the meta-analytic sample

Table 1. Meta-Analytic Sample Characteristics by the Level of Measurement and Cultural Dimension

Level of Measurement Cultural Value Dimension	Individual					Group					National					Grand Total
	IND	PD	UA	MAS	Total	IND	PD	UA	MAS	Total	IND	PD	UA	MAS	Total	
Numeric effect, data point count	771	164	73	196	1,204	34	5	4	2	45	87	71	56	44	258	1,507
Vote count, data point count	282	73	19	27	401	4	0	0	5	9	0	0	0	0	0	414
Percent data points obtained using VSM	21.2	57.0	70.8	62.3	34.5	18.5	36.8	78.6	20.0	30.1	76.2	92.1	80.7	100.0	83.2	40.2
Moderator analysis <sup>1</sup>																
Age, count	1,247	222	113	269	1,851											
Age, mean <sup>2</sup>	26.8	28.2	33.3	28.8	28.2	30.0	34.5	34.3	34.3	31.2	35.6	35.3	33.4	33.4	34.5	27.9
Gender, data point count	1,170	215	102	252	1,739											
Gender, mean (% male in the sample) <sup>2</sup>	48.9	59.5	61.9	54.9	52.4	51.2	51.6	49.1	53.5	51.3	56.2	62.0	65.8	58.7	58.6	52.7
Student status, data point count	1,310	261	138	336	2,045											
Student samples, percent <sup>2</sup>	60.0	43.3	35.8	61.9	56.5	45.2	34.7	66.7	66.7	49.4	20.1	15.9	17.5	17.4	18.9	49.1
Education, data point count	1,179	221	115	296	1,811											
Average years of education <sup>2</sup>	14	15	15	15	15	14	15	16	14	14	15	16	17	16	16	15
Cultural tightness-looseness	976	180	77	208	1,441											
Percent original data for culture	98.4	95.8	90.7	94.2	96.7	89.5	77.4	76.1	51.3	84.0	44.8	23.5	22.0	31.1	31.9	84.2

## Abbreviations:

IND - Individualism

PD - Power Distance

MAS - Masculinity

UA - Uncertainty Avoidance

<sup>1</sup> Moderator analysis was conducted only with individual-level data. All numeric data points used in the main-effect analysis were included in the the moderator analysis. Vote-count studies were not used in moderator analysis and are not accounted for in the sample characteristics report provided here

<sup>2</sup> The exact report on demographic of the participants could provided only for individual-level studies; many group- and national-level studies used secondary data, normally Hofstede's country scores, to operationalize culture; provided here is an estimate of the demographics of the pooled sample.

Note: Most publications included in the meta-analytic dataset were based on multi-country multi-sample research design. The summary provides count of data points corresponding to count of samples, not publications.

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Attitudes: Perceived Justice and Reward Allocation Rule Preference																															
Perceived Justice in Organization	13	3,870	-0.08	-0.10*	0.16	-0.18	-0.01	-0.37	0.18		12	2,611	3	3	6		9	4,117	0.15	0.19*	0.08	0.14	0.25	0.08	0.31		5	1,046	2	2	1
Equality	8	1,985	0.07	0.09*	0.25	0.03	0.16	-0.35	0.54		26	6,521	15	4	7		6	3,369	0.05	0.07	0.12	-0.03	0.16	-0.13	0.26		6	913		2	4
Equity	15	5,119	-0.06	-0.09*	0.18	-0.12	-0.04	-0.43	0.26		9	1,880	1		8												3	656	3		
Need											4	608	1		3												3	508	2		1
Seniority	4	664	-0.17	-0.28*	0.08	-0.37	-0.19	-0.28	-0.28																						
Totals/Absolute Weighted Averages	40	11,638	0.07	0.10	0.18						51	11,620					15	7,486	0.10	0.14	0.10						17	3,123			
Attitudes and Perceptions: Leadership Style Preference																															
Charisma	7	3,447	-0.19	-0.25*	0.06	-0.30	-0.19	-0.32	-0.18		6	698			6		13	2,089	0.24	0.33*	0.18	0.24	0.43	0.05	0.61		5	447	4	1	
Directive	13	2,629	-0.13	-0.18*	0.07	-0.22	-0.14	-0.18	-0.18		4	1,556	3		1		8	5,973	-0.10	-0.15*	0.10	-0.22	-0.08	-0.33	-0.03		11	2,546	1		10
Participative	8	6,513	0.16	0.24*	0.08	0.19	0.29	0.11	0.37							7	1,903	0.01	-0.02	0.16	-0.14	0.09	-0.28	0.24							
Inspirational	7	3,077	-0.07	-0.09*	0.11	-0.17	0.00	-0.28	0.00							3	4,483	0.02	0.03	0.03	-0.01	0.06	0.03	0.03							
Transformational	4	4,047	0.00	0.00	0.07	-0.06	0.06	-0.09	0.00																						
Preference for Leader who Stimulates Intellectual Input	3	2,293	-0.05	-0.07	0.11	-0.20	0.06	-0.28	0.14																						
Preference for Paternalism	3	886	0.29	0.46*	0.09	0.33	0.59	0.39	0.53		3	490	3														4	615			4
Closeness with Supervisor											13	2,744					31	14,448	0.08	0.12	0.10						20	3,608			
Totals/Absolute Weighted Averages	45	22,892	0.11	0.16	0.08																										
Attitudes and Perceptions: Non-work-Related																															
Religiosity	23	9,297	-0.24	-0.35*	0.18	-0.42	-0.27	-0.68	-0.01							5	801	0.25	0.36*	0.13	0.24	0.48	0.19	0.52							
Nationalism/Ethnocentrism	10	3,900		-0.06*	0.08	-0.12	-0.01	-0.19	0.06							3	8,706	-0.02	-0.03	0.11	-0.15	0.09	-0.23	0.17							
Family Values – Importance of Family	15	4,315	-0.10	-0.13*	0.14	-0.20	-0.07	-0.36	0.09							3	446	0.09	0.11	0.13	-0.06	0.28	-0.08	0.31							
Family Values – Work Centrality	9	2,853	0.23	0.32*	0.14	0.21	0.41	0.08	0.56		2	1,619	2																		
Equality – Individual Values	5	6,042		0.18	0.16	0.20	-0.17	0.18	0.53																						
Willingness to seek counseling/professional help	4	1,364	-0.13	-0.17*	0.11	-0.28	-0.07	-0.36	0.01		5		3		2																
Acculturation	20	3,695	0.10	0.13*	0.15	0.05	0.21	-0.11	0.36		2	226	1		1																
Satisfaction – Life Satisfaction	11	7,093	0.10	0.14*	0.09	0.09	0.20	0.00	0.29		4	959	3		1																
Coping - Active	4	680	0.17	0.23*	0.17	0.07	0.41	-0.04	0.51																						
Coping - Passive	4	794	-0.20	-0.29*	0.18	-0.45	-0.13	-0.58	0.01																						
Gender Role Equality	3	4,163	0.09	0.18*	0.04	0.12	0.24	0.18	0.18		1	1,080	1																		
Totals/Absolute Weighted Averages	108	44,196	0.12	0.20	0.13						14	3,884					11	9,953	0.04	0.06	0.11						0	0			
All Attitudes and Perceptions: Overall Weighted Averages/Totals	420	162,243	0.16	0.23	0.15						157	45,403					131	71,171	0.11	0.16	0.13						50	9,687			
Emotions																															
Depression	12	1,964	-0.10	-0.11*	0.17	-0.22	-0.03	-0.38	0.16		2	216			2																
Anxiety	8	1,206	-0.09	-0.11*	0.15	-0.22	-0.01	-0.33	0.11		7	1,468			6																
Embarrassability	9	3,253	-0.31	-0.42*	0.10	-0.47	-0.35	-0.56	-0.27		1	141			1																
Totals/Absolute Weighted Averages	29	6,423	0.20	0.27	0.13						10	1,825					0	0									0	0			
Traits																															
Agreeableness	14	7,708	-0.13	-0.21*	0.12	-0.27	-0.12	-0.41	-0.01																						
Conscientiousness	15	8,740	-0.09	-0.14*	0.17	-0.22	-0.04	-0.45	0.17																						
Extraversion	12	3,896	0.07	0.09	0.21	-0.03	0.21	-0.31	0.48							4	3,190	0.07	0.10	0.10	-0.02	0.21	-0.09	0.29							
Neuroticism	10	5,717	-0.04	-0.07	0.10	-0.12	0.01	-0.23	0.10																						
Openness	17	7,036	0.04	0.06*	0.10	0.02	0.11	-0.10	0.23																						
Internal LOC	6	1,455	0.05	0.07	0.12	-0.02	0.17	-0.09	0.23		2	737	2																		
External LOC	6	1,506	-0.17	-0.22*	0.11	-0.31	-0.14	-0.36	-0.07																						
Competitiveness	13	1,964	0.13	0.17*	0.13	0.10	0.25	0.00	0.34		1	315			1												1	315			1
Risk Liking	7	1,480	0.02	0.04	0.17	-0.10	0.18	-0.23	0.32		6	1,419	2		3																
Self- Esteem	33	7,211	0.19	0.25*	0.19	0.19	0.32	-0.09	0.60		11	4,602	9		2												1	233			1
Self- Efficacy	9	3,341	0.12	0.14*	0.10	0.08	0.21	-0.01	0.00																						
Totals/Absolute Weighted Averages	142	50,054	0.10	0.14	0.14						20	7,073					14	8,752	0.10	0.14	0.07						2	548			
Performance	23	7,346	0.02	0.02	0.14	-0.03	0.08	-0.21	0.26																		0	0			
WEIGHTED GRAND AVERAGES/TOTALS	771	271,232	0.14	0.19	0.14						282	85,804					164	85,652	0.11	0.15	0.12						73	15,329			

k - number of independent samples

N - number of individuals

p - meta-analytic effect size, \* significant at p&lt;0.05

SDp - standard deviation of the effect size

Col<sub>l</sub>, lower and upper boundaries of confidence intervalsCr<sub>l</sub>, lower and upper boundaries of credibility intervals

# + number of studies that showed statistically significant positive effect

#ns number of studies that showed no statistically significant effect

# - number of studies that showed statistically significant negative effect



Table 2 (continued)											Table 3 (continued)																					
UA											MAS																					
effect size											vote count					effect size											vote count					
k	N	r	p	SDp	Col <sub>i</sub>	Col <sub>h</sub>	Cr <sub>l</sub>	Cr <sub>h</sub>			k	N	# +	#ns	# -	k	N	r	p	SDp	Col <sub>i</sub>	Col <sub>h</sub>	Cr <sub>l</sub>	Cr <sub>h</sub>	k	N	# +	#ns	# -			
Behaviors: Work-Related																																
Absenteeism																																
Cooperation with colleagues																																
Effort																																
Entrepreneurial behavior																																
Helpfulness																																
Innovation	5	1,636	-0.28	-0.41*	0.20	-0.57	-0.30	-0.78	-0.04																							
Organizational Citizenship Behaviors																																
Reaction to Injustice: Active (Voice, Exit)																																
Reaction to Injustice: Passive (Loyalty, Neglect)																																
Turnover																																
Totals/Absolute Weighted Averages	3	1,264		0.41	0.10						0	0				3	1,088		0.16	0.05					0	0						
Behavior: Communication																																
Indirectness																																
Self-Promotion																																
Sensitivity to Others	3	804	0.11	0.15*	0.05	0.08	0.22	0.15	0.15																							
Positive attitude to Silence																																
Openness in Communication																																
High-Low Context Communication																																
Tendency to Display Emotions											1	220			1	3	2,161	0.07	0.10*	0.17	-0.09	-0.29	-0.21	0.41								
Propensity to Dishonesty in Communication																																
Totals/Absolute Weighted Averages	3	804	0.11	0.15	0.05						1	220				12	4,393	0.10	0.13	0.10					0	0						
Behaviors: Conflict Management/Negotiation																																
Conflict Avoidance																																
Confrontation																																
Accommodation																																
Compromising																																
Cooperation with Opponents in Negotiations																																
Totals/Absolute Weighted Averages	0	0									0	0				16	2,188	0.13	0.20	0.10					3	988						
All Behaviors: Overall Weighted Averages/Totals	8	2,440	0.22	0.32	0.15											31	7,669	0.11	0.15	0.10					3	988						
Attitudes and Perceptions: Work-Related																																
Ethics – Avoiding Unethical Behavior	6	5,876	0.13	0.20*	0.11	0.10	0.29	0.00	0.40		5	1,560	1	1	3	4	5,283	-0.18	-0.25*	0.26	-0.51	-0.01	-0.76	0.26	1	138			1			
Exchange Ideology (this-for-that)																																
Feedback Seeking																																
Identification with Organization																																
Organizational Commitment: Affective	3	975	0.08	0.11*	0.08	0.01	0.20	0.07	0.16							3	1,505	-0.14	-0.18*	0.05	-0.24	-0.13	-0.18	-0.18								
Organizational Commitment: Continuance	3	975	0.30	0.42*	0.17	0.26	0.60	0.12	0.72							4	1,555	0.02	0.03	0.07	-0.05	0.10	-0.04	0.09								
Organizational Commitment: General																																
Organizational Commitment: Normative	4	1,131	0.11	0.14*	0.07	0.08	0.21	0.14	0.14							5	1,417	0.14	0.19*	0.13	0.08	0.30	-0.01	0.38								
Satisfaction - Coworker																																
Satisfaction – Job Satisfaction	4	1,425	0.18	0.24*	0.18	0.04	0.42	-0.10	0.58																							
Satisfaction - Supervisor	3	1,065	0.11	0.14*	0.09	0.03	0.24	0.02	0.25							3	706	-0.10	-0.12*	0.11	-0.24	-0.01	-0.30	0.06								
Trust																																
Totals/Absolute Weighted Averages	23	11,447	0.14	0.16	0.12						5	1,560				19	10,466	0.14	0.19	0.17					1	138						
Attitudes and Perceptions: Group-Related																																
Need for Affiliation																																
In Group Favoritism																																
Team Commitment	4	5,333	0.24	0.37*	0.09	0.32	0.43	0.20	0.53							13	9,238	0.11	0.15	0.29	-0.01	0.31	-0.42	0.71								
Independence																																
Social Avoidance																																
Conformity	3	4,483	0.09	0.13*	0.01	0.08	0.17	0.13	0.13							3	598	0.43	0.55*	0.04	0.47	0.64	0.55	0.55								
Teamwork Preference	3	134	0.13	0.18*	0.10	0.07	0.30	0.18	0.18		1	205			1	12	3,247	-0.03	-0.05	0.09	-0.08	0.01	-0.18	0.08	1	359			1			
Totals/Absolute Weighted Averages	10	9,950	0.17	0.26	0.05						1	205				36	16,076	0.11	0.16	0.21					5	2,607						
Attitudes: Conflict Management/Negotiation																																
Concern for others' interests																																
Preference for third party involvement																																
Totals/Absolute Weighted Averages	0	0									0	0				0	0								1	26			1			
																									4	1,145			4			
																									5	1,171						

UA										MAS																			
effect size										effect size																			
k	N	r	p	SDp	Col <sub>l</sub>	Col <sub>h</sub>	Cr <sub>l</sub>	Cr <sub>h</sub>		k	N	# +	#ns	# -	k	N	r	p	SDp	Col <sub>l</sub>	Col <sub>h</sub>	Cr <sub>l</sub>	Cr <sub>h</sub>	k	N	# +	#ns	# -	
Attitudes: Perceived Justice and Reward Allocation Rule Preference																													
Perceived Justice in Organization	3	1,258	0.16	0.21*	0.07	0.12	0.29	0.15	0.26						3	1,061	-0.03	-0.04	0.05	-0.10	0.02	-0.04	-0.04						
Equality															3	642	-0.08	0.00	0.10	-0.11	0.11	-0.06	0.05	1	91			1	
Equity	4	2,739	0.01	0.02	0.08	-0.06	0.00	-0.11	0.14	1	541			1	9	3,518	-0.09	-0.13*	0.09	-0.18	-0.07	-0.24	-0.01	3	650	2	1		
Need																													
Seniority																													
Totals/Absolute Weighted Averages	7	3,997	0.06	0.08	0.08					1	541				15	5,221	0.08	0.10	0.08					4	741				
Attitudes and Perceptions: Leadership Style Preference																													
Charisma																													
Directive	6	1,954	0.27	0.36*	0.14	0.27	0.47	0.12	0.00	3	464	1		2	10	1,907	-0.10	-0.12*	0.10	-0.18	-0.06	-0.21	-0.03						
Participative	5	4,862	-0.16	-0.25*	0.04	-0.29	-0.20	-0.25	-0.25						3	4,930	-0.01	-0.01	0.03	-0.05	0.03	-0.01	-0.01	2	410	2			
Inspirational	7	3,077	0.01	0.02	0.11	-0.07	0.10	-0.15	0.19						6	2,718	-0.12	-0.15*	0.10	-0.23	-0.08	-0.32	0.02						
Transformational	3	4,483	-0.01	-0.01	0.02	-0.05	0.03	-0.01	-0.01						3	4,483	0.05	0.08*	0.04	0.03	0.12	0.08	0.08						
Preference for Leader who Stimulates Intellectual Input																													
Preference for Paternalism															3	886		0.21*	0.12	0.08	0.34	0.04	0.37						
Closeness with Supervisor																													
Totals/Absolute Weighted Averages	21	14,376	0.10	0.14	0.06					3	464				25	14,924	0.05	0.08	0.06					2	410				
Attitudes and Perceptions: Non-work-Related																													
Religiosity																													
Nationalism/Ethnocentrism															19	8,741	-0.14	-0.20*	0.12	-0.26	-0.15	-0.41	0.01						
Family Values – Importance of Family															5	2,407	0.24	0.33*	0.17	0.18	0.47	0.02	0.63						
Family Values – Work Centrality										2	852	1		1										1	205	1			
Equality – Individual Values															3	4,959	-0.35	-0.44*	0.11	-0.56	-0.32	-0.64	-0.24						
Willingness to seek counseling/professional help																													
Acculturation																													
Satisfaction – Life Satisfaction																													
Coping - Active																													
Coping - Passive																													
Gender Role Equality										1	1,080			1	3	6,890		0.26	0.43	-0.23	0.75	-0.59	0.00	2	2,105			2	
Totals/Absolute Weighted Averages	0	0								3	1,932				30	22,997	0.15	0.28	0.22					3	2,310				
All Attitudes and Perceptions: Overall Weighted Averages/Totals	61	39,770	0.12	0.17	0.08					13	4,702				125	69,684	0.12	0.16	0.18					20	7,377				
Emotions																													
Depression																													
Anxiety																													
Embarrassability																													
Totals/Absolute Weighted Averages	0	0								0	0				0	0								0	0				
Traits																													
Agreeableness															5	4,304	-0.18	-0.27	0.30	-0.55	0.02	-0.89	0.35						
Conscientiousness															5	1,304	0.16	0.24*	0.17	0.05	0.39	-0.10	0.57						
Extraversion															7	3,711	0.10	0.14*	0.16	0.01	0.26	-0.16	0.44						
Neuroticism															3														
Openness														</															

k - number of independent samples

N - number of individuals

 $\rho$  - meta-analytic effect size, \* significant at  $p < 0.05$ 

SDp - standard deviation of the effect size

Col<sub>l</sub>/h - lower and upper boundaries of confidence intervalsCr<sub>l</sub>/h - lower and upper boundaries of credibility intervals

# + number of studies that showed statistically significant positive effect

#ns number of studies that showed no statistically significant effect

# - number of studies that showed statistically significant negative effect

Table 3. Main Effects of Culture, Group Level

	IND										PD										UA										MAS													
	effect size									vote count					effect size					effect size					effect size																			
	k	N	r	p	SDp	Col <sub>l</sub>	Col <sub>h</sub>	Cr <sub>l</sub>	Cr <sub>h</sub>	k	N	#+	#ns	#-	k	N	r	p	SDp	Col <sub>l</sub>	Col <sub>h</sub>	Cr <sub>l</sub>	Cr <sub>h</sub>	k	N	r	p	SDp	Col <sub>l</sub>	Col <sub>h</sub>	Cr <sub>l</sub>	Cr <sub>h</sub>	k	N	r	p	SDp	Col <sub>l</sub>	Col <sub>h</sub>	Cr <sub>l</sub>	Cr <sub>h</sub>			
Attitudes and Perceptions																																												
Group cohesiveness	10	965	-0.10	-0.11*	0.08	-0.17	-0.04	-0.37	0.03																																			
Behaviors																																												
Compromising	3	254	-0.16	0.19*	0.05	0.07	0.30	0.44	-0.06																																			
Cooperation in group	6	301	-0.37	-0.39*	0.21	-0.48	-0.29	-0.73	-0.04	2	532			2	2	58	0.36	0.37*	0.05	0.14	0.59	0.19	0.55	2	58	0.36	0.37*	0.16	0.14	0.60	0.61	0.13	2	58	-0.44	-0.45*	0.15	-0.68	-0.23	-0.57	0.34			
Entrepreneurship	3	597	0.12	0.19*	0.14	0.03	0.33	-0.03	0.41																																			
Totals/Absolute Weighted Averages	12	1,152	0.19	0.24	0.15					2	532			2	2	58	0.36	0.37	0.05					2	58	0.36	0.37	0.16					2	58	0.44	0.45	0.15							
Performance																																												
Joint gain in negotiation	3	265	-0.33	-0.35*	0.09	-0.45	-0.25	-0.35	-0.35	1			1																															
Group performance	9	832	-0.13	-0.15*	0.14	-0.24	-0.06	-0.28	-0.02	1	156		1	3	211	-0.09	-0.11*	0.10	-0.27	0.06	-0.11	-0.11	2	91	0.23	0.23*	0.15	0.06	0.49	0.28	0.28													
Totals/Absolute Weighted Averages	12	1,097	0.18	0.20	0.13					1	156			3	211	0.09	0.11	0.10					2	91	0.23	0.28	0.15					0	0											
WEIGHTED GRAND AVERAGES/TOTALS	34	3,214	0.16	0.19	0.12					4	688			5	269	0.15	0.17	0.08					4	149	0.28	0.32	0.16					2	58	0.44	0.45	0.15								

k - number of available data points (reported independent effect sizes)

N - number of groups or firms used to obtain the effect size

p - meta-analytic effect size, \* significant at p&lt;0.05

SDp - standard deviation of the effect size

Col<sub>l</sub> - lower and upper boundaries of confidence intervalsCr<sub>l</sub> - lower and upper boundaries of credibility intervals

# + number of studies that showed statistically significant positive effect

#ns number of studies that showed no statistically significant effect

# - number of studies that showed statistically significant negative effect

Table 4. Main Effects of Culture, Country Level

	IND										PD										UA										MAS									
	k	N	r	ρ	SDp	Col <sub>l</sub>	Col <sub>h</sub>	Cr <sub>l</sub>	Cr <sub>h</sub>		k	N	r	ρ	SDp	Col <sub>l</sub>	Col <sub>h</sub>	Cr <sub>l</sub>	Cr <sub>h</sub>		k	N	r	ρ	SDp	Col <sub>l</sub>	Col <sub>h</sub>	Cr <sub>l</sub>	Cr <sub>h</sub>		k	N	r	ρ	SDp	Col <sub>l</sub>	Col <sub>h</sub>	Cr <sub>l</sub>	Cr <sub>h</sub>	
Attitudes and Perceptions																																								
Satisfaction - Supervisor	5	180	-0.23	-0.30*	0.19	-0.47	-0.11	-0.49	-0.10		3	58	0.40	0.42*	0.17	0.11	0.73	0.12	0.70		3	57	0.18	0.26*	0.21	0.02	0.51	0.26	0.26											
Conformity	3	58	-0.40	-0.42*	0.27	-0.73	-0.11	-0.80	-0.04		3	78		0.34*	0.16	0.10	0.57	0.34	0.34																					
Family Values – Importance of Family	3	72	-0.42	-0.55*	0.34	-0.97	-0.14	-1.00	-0.06		3	78																												
Satisfaction – Life Satisfaction	6	205	0.46	0.64*	0.15	0.53	0.76	0.64	0.64		5	163	-0.31	-0.43*	0.31	-0.71	-0.15	-0.89	-0.03		4	80	-0.35	-0.49*	0.37	-0.85	-0.12	-0.98	0.00		3	76	-0.11	-0.16*	0.07	-0.24	-0.08	-0.16	-0.16	
Totals/Absolute Weighted Averages	17	515	0.37	0.48	0.24						11	299	0.25	0.4	0.21						7	137	0.28	0.39	0.29						3	76	0.11	0.16						
Traits																																								
Aoreeableness	2	72	-0.30	-0.42*	0.14	-0.59	-0.24	-0.42	-0.42		2	72	0.33	0.46*	0.05	0.40	0.51	0.46	0.46		2	72	-0.21	-0.29	0.37	-0.83	0.26	-0.92	0.35		2	72	-0.02	-0.02	0.12	-0.19	0.14	-0.02	-0.02	
Conscientiousness	2	72	-0.20	-0.28*	0.13	-0.47	-0.10	-0.28	-0.28		2	72	0.28	0.38	0.33	-0.10	0.86	-0.15	0.92		2	72	0.03	0.04	0.35	-0.46	0.53	-0.49	0.57		2	72	-0.02	-0.03	0.10	-0.18	0.12	-0.03	-0.03	
Extraversion	4	126	0.36	0.51*	0.33	0.12	0.90	-0.03	1.00		4	126	-0.34	-0.48*	0.24	-0.71	-0.24	-0.68	-0.27		4	126	0.01	0.01	0.28	-0.28	0.30	-0.30	0.33		4	126	0.01	0.01	0.20	-0.20	0.22	0.01	0.01	
Neuroticism	4	126	-0.09	-0.12	0.27	-0.40	0.15	-0.38	0.13		4	126	0.29	0.39*	0.19	0.20	0.58	0.39	0.39		4	126	0.43	0.59*	0.20	0.38	0.81	0.47	0.71		4	126	0.21	0.29	0.38	-0.10	0.68	-0.33	0.91	
Openness	2	72	0.38	0.52*	0.10	0.38	0.66	0.52	0.52		2	72	-0.39	-0.54*	0.04	-0.81	-0.27	-0.54	-0.54		2	72	0.04	0.06	0.14	-0.15	0.26	0.06	0.06		2	72	0.10	0.13	0.01	-0.19	0.45	0.13	0.13	
External LOC	4	67	-0.36	-0.46*	0.22	-0.76	-0.27	-0.46	-0.46																															
Totals/Absolute Weighted Averages	18	535	0.27	0.37	0.21						14	468	0.32	0.47	0.20						14	468	0.16	0.22	0.24						14	468	0.08	0.11	0.17					
Nation Level Outcomes																																								
Economic Growth	6	224	-0.07	-0.09	0.25	-0.29	0.12	-0.42	0.24		6	193	0.11	0.14	0.47	-0.25	0.53	-0.73	1.00		5	174	-0.07	-0.08	0.41	-0.46	0.29	-0.82	0.65		4	141	-0.06	-0.07	0.23	-0.32	0.17	-0.34	0.19	
Wealth	19	646	0.58	0.70*	0.44	0.65	0.75	-0.14	1.00		20	633	-0.34	-0.41*	0.59	-0.67	-0.14	-1.00	0.72		11	382	-0.20	-0.23*	0.34	-0.44	-0.03	-0.79	0.33		13	664	0.09	0.11*	0.18	0.01	0.22	-0.07	0.29	
Human Rights	8	315	0.40	0.47*	0.28	0.27	0.68	0.00	0.95		7	254	-0.38	-0.45*	0.18	-0.59	-0.31	-0.59	-0.31		5	259	-0.13	-0.16	0.62	-0.71	0.40	-1.00	1.00											
Corruption	5	19	-0.70	-0.84*	0.02	-0.93	-0.76	-0.84	-0.84		5	196	0.70	0.83*	0.03	0.75	0.92	0.83	0.83		5	196	0.36	0.43*	0.05	0.40	0.46	0.43	0.43		5	196	0.25	0.29*	0.20	0.12	0.47	0.12	0.46	
Gender Role Equality	5	222	0.25	0.29*	0.23	0.09	0.50	-0.04	0.63		4	174	-0.42	-0.49*	0.17	-0.65	-0.32	-0.66	-0.31											2	71	-0.43	-0.50*	0.45	-0.72	-0.27	-1.00	0.34		
Innovation	3	86	0.54	0.65*	0.27	0.35	0.95	0.23	1.00												3	86	-0.38	-0.45*	0.23	-0.71	-0.20	-0.67	-0.23											
Income Equality	3	128	0.53	0.64*	0.14	0.45	0.82	0.46	0.82		4	148	-0.50	-0.60*	0.07	-0.67	-0.52	-0.60	-0.60		3	128	-0.21	-0.25*	0.10	-0.37	-0.14	-0.25	-0.25		3	128	-0.11	-0.13	0.16	-0.32	0.05	-0.13	-0.13	
Inflation	3	127	-0.06	-0.07	0.07	-0.16	0.01	-0.07	-0.07		3	148	0.32	0.38*	0.28	0.05	0.71	-0.10	0.86		3	148	0.32	0.38*	0.28	0.05	0.71	-0.10	0.86											
Totals/Absolute Weighted Averages	52	1,767	0.40	0.47	0.21						46	1,598	0.39	0.46	0.25						35	1,373	0.22	0.26	0.29						27	1,200	0.13	0.22	0.24					
WEIGHTED GRAND AVERAGES/TOTALS	87	2,817	0.37	0.47	0.22						71	2,365	0.36	0.45	0.24						56	1,978	0.21	0.26	0.28						44	1,744	0.12	0.15	0.21					

k - number of available data points (reported independent effect sizes)

N - number of national samples used to obtain the effect size

p - meta-analytic effect size, \* significant at p&lt;0.05

SDp - standard deviation of the effect size

Col<sub>l</sub> - lower and upper boundaries of confidence intervalsCr<sub>l</sub> - lower and upper boundaries of credibility intervals

# + number of studies that showed statistically significant positive effect

#ns number of studies that showed no statistically significant effect

# - number of studies that showed statistically significant negative effect

Table 5. Meta-Analytic Findings for Predictive Validity of Personality, Cognitive Abilities, and Demographic Characteristics

	Emotions				Attitudes				Behaviors				Performance				Overall <sup>a</sup>			
	r	K	p	K	r	K	p	K	r	K	p	K	r	K	p	K	r	K	p	K
Culture, overall	0.20	3	0.27	3	0.13	43	0.20	43	0.11	23	0.15	23	0.03	1	0.03	1	0.13	70	0.18	70
Individualism			0.27	3	0.16	43	0.23	43	0.11	23	0.14	23	0.02	1	0.02	1	0.14	67	0.20	70
Power Distance					0.11	20	0.16	20	0.11	5	0.15	5	0.01	1	0.01	1	0.11	26	0.15	26
Uncertainty Avoidance					0.12	15	0.17	15	0.22	3	0.32	3	0.08	1	0.10	1	0.13	19	0.19	19
Masculinity					0.12	23	0.18	23	0.11	10	0.15	10	0.01	1	0.01	1	0.11	34	0.17	34
Personality, overall	0.15	5	0.20	14	0.13	89	0.18	49	0.10	36	0.14	21	0.09	103	0.12	81	0.11	233	0.15	165
Neuroticism	0.02	1	0.19	4	0.15	17	0.23	12	0.10	4	0.12	5	0.10	20	0.11	16	0.12	42	0.16	37
Extraversion	0.13	1	0.22	4	0.15	18	0.18	9	0.07	6	0.11	3	0.09	20	0.12	17	0.11	45	0.15	33
Opens	0.12	1	0.14	1	0.13	17	0.13	8	0.05	5	0.06	3	0.07	20	0.07	16	0.09	43	0.09	28
Agreeableness	0.14	1	0.08	1	0.11	19	0.18	10	0.10	13	0.12	5	0.08	23	0.12	16	0.10	56	0.14	32
Conscientiousness	0.33	1	0.35	1	0.13	18	0.13	10	0.14	8	0.28	5	0.14	20	0.19	16	0.14	47	0.19	32
Demographics, overall	0.08	4	0.09	14	0.06	8	0.10	17	0.09	16	0.13	6	0.08	14	0.09	8	0.08	42	0.10	45
Age			0.12	2			0.20	4	0.11	3	0.14	3	0.09	8	0.04	1	0.10	11	0.15	10
Work experience					0.07	2	0.11	3	0.09	3	0.16	2	0.09	1	0.11	2	0.08	6	0.12	7
Gender	0.08	2	0.09	9	0.07	2	0.09	5	0.08	10			0.04	3	0.12	1	0.07	17	0.09	15
Education	0.08	2	0.11	3	0.03	1	0.04	2									0.06	3	0.08	5
Race					0.07	3	0.08	3			0.09	1	0.10	2	0.11	4	0.08	5	0.10	8
General Cognitive Ability	0.07	1			0.09	1			0.17		0.25	4	0.33	26	0.54	21	0.32	27	0.48	26

r = Absolute average correlation weighted by k (the number of meta-analytic effect sizes reported)

p = Absolute average correlation corrected for measurement unreliability weighted by k (the number of meta-analytic effect sizes)

K = Number of meta-analytic effect sizes summarized: for the present study (culture), K represents the number of outcomes for which we a meta-analytic effect sizes were calculated; for the other meta-analyses (personality, demographics, general cognitive ability) the number represents the number of meta-analytic effect sizes reported in all meta-analytic papers included in the summary falling in the broad category, most studies reported both r and p

<sup>a</sup> For the present study, the overall weighted r and r are weighted by number of studies (k) and thus are slightly different than those reported in Table 2 that were weighted by the number of participants (N)

Table 6: Moderator Analysis: Overall Weighted Average Moderating Effects

	Age	Student <sup>a</sup>	Gender <sup>b</sup>	Education	Data source <sup>c</sup>	Cultural Tightness <sup>d</sup>
Moderation Effect, r	0.19*	-0.16*	0.23*	0.28*	0.39*	0.28*
k	1,812	2,002	1,902	1,798	2,147	797

a - Student =1, otherwise = 0

b - Male = 1, otherwise =0

c - Original data = 1, data from external source = 0

d - Higher scores represent tight cultures; lower scores represent loose cultures

\* p<0.01

Note: The dependent variable is absolute value of correlation between culture and organizational outcomes

Table 7. Summary of Meta-Analytic Findings

Research Question/Hypothesis	Finding
<i>RQ#1: Comparative predictive power of different cultural values</i>	Comparing the predictive power of the four cultural value dimensions across all outcomes, there were no significant differences at the individual level; moderate (but not significant) differences at the group level; and strongly significant differences at the country level.
<i>RQ1: Comparative predictive power of culture vs. personality, demographics, general cognitive ability</i>	At the individual level, in general, the predictive power of the cultural values on outcomes was as strong as that of demographics, personality traits, and cognitive ability (although the results do depend on the specific outcome in question).
<i>H1: Effect of culture on emotions vs. attitudes vs. behaviors vs. performance</i>	The predictive power of the cultural values was strongest for emotions, followed by attitudes and perceptions, then behaviors, and finally job performance.
<i>H2a: Moderating effect of age</i>	The predictive power the cultural values was significantly stronger for older, rather than younger, respondents.
<i>H2b: Moderating effect of student/employee status</i>	The predictive power of the cultural values was significantly stronger for managers and employees, rather than students.
<i>H2c: Moderating effect of gender</i>	The predictive power of the cultural values was significantly stronger for men, rather than women.
<i>H2d: Moderating effect of education</i>	The predictive power of the cultural values was significantly stronger for those with more, rather than less, years of education.
<i>H3: Moderating effect of data source</i>	The predictive power of the cultural values was significantly stronger for studies using primary, rather than secondary, data.
<i>H4: Moderating effect of cultural tightness/looseness</i>	The predictive power of the cultural values was significantly stronger for culturally tighter, rather than looser, countries.

RQ – Research Question

H – Hypothesis

Table 8. Summary of Future Research Directions

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<b>Conceptual Issues</b>	
1.	Hofstede's cultural value dimensions remain theoretically relevant to the study of cultural differences.
2.	Researchers should move beyond individualism-collectivism as the dominant cultural value of interest.
3.	Broaden the study of mediators of cultural value effects to increase understanding of underlying theoretical mechanisms responsible for these effects (i.e., use more process models).
4.	Broaden the study of cultural values as moderators.
5.	Use meta-analytic results as an impetus to conduct more fine-grained studies of cultural value effects showing that certain cultural values are more strongly related to certain outcomes (i.e., paralleling research on the Big Five personality traits).
6.	Move beyond cultural values as the only way to examine effects of cultural differences (e.g., beliefs).
<b>Measurement Issues</b>	
1.	Hofstede's Value Survey Module did not show any less predictive power when compared to cultural value measures designed specifically at the individual level of analysis; thus, it can be used to conduct individual level studies.
2.	Cultural value measures designed specifically for the individual level now exist and should be considered, particularly when trying to predict work-related outcomes (e.g., psychological collectivism – Jackson et al., 2006; power distance orientation – Earley & Erez, 1997).
3.	Opportunities exist for researchers to explore different facets of Hofstede's cultural value dimensions (e.g., Jackson et al.'s, 2006, psychological collectivism measure contains five sub-dimensions). Paralleling research on the sub-dimensions of the Big Five, research might improve the predictive power of the cultural value dimensions by matching the bandwidth of predictors and criteria.
4.	Chen et al. (2004) and Kozlowski and Klein (2000) described six distinct models for creating aggregate constructs: selected score, summary index, consensus, referent-shift, dispersion, and aggregate models. Cross-cultural research has relied almost exclusively on summary index and referent-shift models to describe culture of a group. Exploring the other four aggregate construct models to operationalize culture is likely to be a promising venue for future research.
<b>Research Design/Sampling Issues</b>	
1.	Due to increases in the pace of cultural change worldwide, there should be a moratorium on using Hofstede's country scores (derived from data collected in the late 1960s and early 1970s).
2.	Sample choice can significantly affect results of examining cultural values and should be more carefully considered in future studies; in particular, researchers should determine whether and/or which subcultures of a country are most influential in determining key characteristics or behaviors.
3.	Culture research would benefit by adopting a multi-source research design, rather than relying exclusively on self-report, survey-based designs.
4.	Future cross-cultural researcher should consider issues of accuracy when assessing cultural values of individuals, perhaps drawing upon Funder's (1995) <i>Realistic Accuracy Model</i> , which identifies moderators of accuracy.
5.	Cross-cultural researchers should incorporate multi-level theories and data analysis techniques into their future research.
6.	Researchers should explore how cultural homogeneity relates to individual level associations.

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Figure 1. An Example of a Multi-Level Model of Future Cultural Value Research (with the individual level as the primary level of focus)

