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DIMENSIONS OF NATIONAL CULTURE AS
MODERATORS OF THE RELATIONSHIPS BETWEEN
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Bradley J. West

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DIMENSIONS OF NATIONAL CULTURE AS MODERATORS OF THE RELATIONSHIPS BETWEEN ORGANIZATIONAL ATTITUDE VARIABLES

By

Bradley J. West

AN ABSTRACT OF A THESIS

Submitted to
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ABSTRACT

DIMENSIONS OF NATIONAL CULTURE AS MODERATORS OF THE RELATIONSHIPS BETWEEN ORGANIZATIONAL ATTITUDE VARIABLES

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This study proposes a model that is used to investigate whether dimensions of national culture moderate the relationships between certain organizational attitude variables. Included in this model are the relationships between the outcome variables of job satisfaction and workplace stress, as well as potential antecedents of those variables, satisfaction with working in teams and attitudes about empowerment. Three of Hofstede's dimensions (individualism/collectivism, power distance, and uncertainty avoidance) were employed as theoretical differences/similarities between cultures. Hierarchical Linear Modeling was used to test for the interaction between cultural dimensions and the relationships between the attitude variables. Results provide limited support for the moderation model. Specifically, it was found that individualism/collectivism moderates the relationship between empowerment and satisfaction, and the relationship between satisfaction and stress, while power distance moderated the relationship between empowerment and stress.

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INTRODUCTION

Since the end of World War II, research interests regarding cross-cultural organizational psychology have increased steadily in modern psychology. Works in recent years by well-known scientists such as Hofstede (1991; 1993), Triandis (1980; 1993; 1994), Adler (1991), Schwartz (1992; 1994), and Erez and Earley (1993) among others, represent a continued desire to understand culture and its relations with other constructs. As the new century begins, continued globalization (Adler, 1997; Fayerweather, 1986; Kobrin, 1984) and improved communication capabilities ensure that cross-cultural organizational issues will continue to be on the minds of both researchers and practitioners alike.

Two endeavors that are described as necessities for furthering our understanding of cross-cultural organizational psychology are the analysis of cultural attributes' relations to organizational constructs (e.g., satisfaction, performance, contextual performance, stress, leadership, team work, etc.) (Brett et al, 1997), and the description of the moderating influences that cultural variables may have on relationships between these constructs (Earley & Erez, 1997). The present study investigates both of these questions using data from a large multinational corporation (U.S. based; collected in 1996, 1998, and 1999) that contains information in the form of employee attitudes. While numerous studies have discussed the way in which various cultures may hold differing attitudes on certain constructs (e.g., a just world (Furnham, 1993), independence (Gudykunst et al, 1994), self esteem (Crocker et al, 1994), leadership (Schmidt & Yeh, 1992), motivation

(Holt & Keats, 1992), few have looked at how cultural tendencies may influence the relationships between organizational attitudes. This study begins to address that question by investigating the moderating effects of culture on various relationships between attitudes on teamwork, supervision, empowerment, stress, and satisfaction. I will begin by discussing culture, its definition and the cultural dimensions that may moderate the relations between job attitudes. This will be followed by a discussion of each of the attitude variables that are assessed in this study including their relevant relationships. Specific hypotheses will be discussed throughout the following sections.

Cultural Research

Based on the last half-century of research, one issue that appears to be quite clear and agreed upon is the fact that culture is a difficult construct to study. In fact, it is down right messy. Definitions of culture vary from one study to the next (Jahoda & Krewer, 1993; Misra & Gergen 1993), primarily in terms of inclusiveness. For example, Herskovits (1955) suggested an inclusive definition where culture is the human-made part of the environment. Such a definition allows for the inclusion of topics ranging from shared tools or highway systems, to beliefs, attitudes and norms passed down among generations. Others have chosen more focused definitions such as that by Shweder and Levine (1984) who defined culture as a shared meaning system (Triandis, 1994). The variation in definitions is problematic in that on one hand, there is a shared appreciation for the importance of operationalizing and studying culture, while on the other hand the lack of agreement makes it difficult to compare studies and accumulate knowledge on the subject. Theoretical and research approaches also differ. From Pike's (1966) emic/etic

distinctions, through Hui and Triandis's (1985) pseudo etic, and Berry's (1969, 1989) three-step process, to the "one way" approach discussed by Brett et al (1997), the theories, methods used, and opinions are diverse. The point is, while there appears to be a general consensus regarding where the field of cross-cultural psychology needs to go, there is more confusion about what the best way to get there is. Publications in this area are beginning to attack this issue from a number of fronts. Among these are improved instrument design (Graen et al., 1997), increased theoretically driven research (Triandis & Bhawuk, 1997), attempts to understand causes for cultural differences/similarities (Brett et al., 1997), and issues of mediation and moderation of organizational variables (Brett et al., 1997).

As I have mentioned, there is no firm agreement on a definition of culture among organizational psychologists. I tend to agree with House et al. (1997) that culture refers to "a set of parameters of collectives that differentiate the collectives from each other in meaningful ways". The desire to seek out and understand these differences between cultures has led to a focus on the identification of cultural dimensions, and the similarities and differences of values between cultures (Erez, 1994).

Hofstede's Dimensions

The set of parameters that will be used in this study to define collectives are three of Hofstede's (1980) four well-known dimensions of power distance, individualism, and uncertainty avoidance. Hofstede feels that culture programs the human mind with values such that certain reactions are more likely in certain cultures. This suggests that individuals from cultures that are formed around shared meanings and values will be

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predisposed to react to stimuli or value certain stimuli such as working in teams in ways that may differ from individuals from cultures with dissimilar shared values. Triandis (1980) states that it is this predisposition to weight stimuli in a particular manner that is the major contribution of culture in clarifying the relationships between situations and behaviors. This aspect of cultural differences thus lends itself to the study of culture as a moderator of the relationships between organizational attitude variables. For example, if a collectivist values group harmony, won't a negative group experience prove more detrimental to overall job satisfaction than it would for an individualist who doesn't value group harmony?

Hofstede feels that the most important differences between cultures may be described using the dimensions of power distance, individualism/collectivism, uncertainty avoidance, and masculinity/femininity (Hofstede, 1991). Masculinity/femininity is not being used in this study. A brief description of each of the three included dimensions follows:

Power distance refers to the extent to which a society accepts the fact that power in organizations is distributed unequally (Hofstede, 1980). Cultures high in power distance prefer unequally distributed power structures whereas cultures low in power distance prefer that power be distributed more equally among members.

Individualism/Collectivism: Individualism refers to the extent to which people are focused on taking care of themselves (or immediate family) even when operating within a group or societal structure. Collectivists give priority to group goals and distinguish between in and out-groups, acting in ways that are both dependent on and for the benefit

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of the larger entity (Triandis et al., 1993; Hofstede, 1980).

Uncertainty avoidance refers to the extent to which individuals within a collective feel threatened by uncertain or ambiguous situations (Hofstede, 1980). Cultures that are high in uncertainty avoidance are those that are threatened by and attempt to avoid uncertain situations. This is similar to what Triandis called "cultural tightness" which suggested that the extent to which a culture dislikes uncertainty is at least partially a function of the homogeneity of the culture itself.

While it is acknowledged that Hofstede's research is over 20 years old, it remains one of the most accepted, and well documented. As of 1991, at least 61 replications had been conducted concerning Hofstede's dimensions. Of those that are even somewhat comparable to Hofstede's studies in terms of sample, size of study, type of data, etc., the majority either fully or partially supported Hofstede's dimensions including a large-scale study by Hoppe (1990) and a follow-up study of Hofstede's work using IBM employees again by Lowe (1994).

Other Theories of Culture

Hofstede however, has not been the only researcher to work with issues regarding cross-cultural psychology. For example, Schwartz and Bilsky (1987, 1990) and Schwartz (1992, 1994) have conducted cross-cultural research with the intent of determining the universal nature of both the content and the structure of values. Schwartz (1992) conducted a study involving 30 nations and found that an initial list of 36 value variables (e.g., a comfortable life, self-respect, freedom, forgiving, loving, responsible) could be reduced to a grouping of 7 "motivational domains" (pro-social, security, maturity, self-

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direction, enjoyment, achievement, & restrictive conformity) that both organized the values, and that were common across the nations under study. He suggests that various groupings of these domains may be mutually sought after due to similar interests being served (e.g., pro-social, restrictive conformity, & security), while other groupings are contradictory as they would seem to serve conflicting interests (e.g., self-direction & restrictive conformity). By providing a foundation of commonalties among cultures and suggesting connections between values and behaviors, Schwartz points out that it should be easier to determine actual variation in value priorities and in the relationships between values and behaviors across cultures (Schwartz, 1994).

Schwartz is somewhat critical of Hofstede's work. Schwartz questions how exhaustive Hofstede's dimensions are, the adequacy of his sample, the fact that his study has become dated, and the equivalence of the value items across cultures. However, despite Schwartz's apparent dislike of Hofstede's work, both Hofstede and Schwartz operationalize cultural membership in terms of national origin, and both define culture in terms of values. Furthermore, both theories of culture assume that values transcend situations, and may guide the selection or evaluation of behaviors and events. While the research conducted by Schwartz and colleagues is an effective attempt at theory development, the scope of their findings and suggestions for further study are too broad to inform the research questions of interest in the current study.

Another attempt at thinking about cultural differences from a somewhat different perspective comes from Erez (1994). She feels that while cultural typologies such as that developed by Hofstede are useful in terms of understanding differences between cultures,

by themselves they fail to aid in an attempt to understand culture as a moderator of the relationship between management practices and employee behavior (Erez, 1994). Erez proposes a new theory of cross-cultural psychology with the primary intent being to facilitate an understanding of the relationships between those variables. Her theory suggests that cultural values act as criteria in the evaluation of managerial practices and their effect on one's well being. Erez suggests that the evaluations affect goal setting that in turn regulates behavior. The primary addition that is offered by her model is that aspects of the self-concept such as enhancement (i.e., maintaining a positive affective state about the self), self-efficacy (i.e., the desire to perceive oneself as competent), and consistency (i.e., the desire to sense and experience coherence and continuity) are treated as the link between cultural values and organizational stimuli. The model would suggest that organizational stimuli (e.g., an empowerment program) are "evaluated by the self in line with the cultural values as they are represented in the self, and with respect to the fulfillment of the self-derived motives, which are driven by the independent and interdependent facets of the self (Erez, 1994, pp 578)". However, the theory of culture put forth by Erez (1994) does not necessarily contradict Hofstede's work. Like Hofstede, Erez defines culture from a cognitive standpoint, discussing cultural distinctions in terms of shared meanings and sets of mental programs. In fact, she even employs Hofstede's dimensions of cultural differences to serve as her culture variables in the model. I interpret this to mean that she feels that the dimensions themselves are not a problem, but only that the way that the dimensions have been employed in the past has not been ideally useful. Given this fact, I feel that the current study takes something from Erez's model in

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that the primary hypotheses of this study deal with the potential moderation effects of culture on organizational variables. That being said however, Erez's theory on work behaviors as outcome variables (rather than attitudes about work), combined with the reliance on obtaining individual level measures of the "self" in terms of cultural dimensions, limits the applicability of this theory to the present study. This study was focused on attitude variables and did not involve an opportunity to gather the suggested individual level standings on cultural dimensions.

There have also been major theoretical attempts at defining more specific cultural dimensions such as that of Triandis et al. (1988) and Triandis (1993) with individualism/collectivism. Unlike Hofstede who suggests that individualism and collectivism are the opposite ends on the same spectrum of dependence, Triandis claims that individualism and collectivism are two separate dimensions (Triandis et al., 1988). He also refers to allocentric and idiocentric people as those individuals who have tendencies towards collectivism and individualism respectively. This thinking allows for the fact that there exist allocentric individuals within individualistic cultures and idiocentric people in collectivist cultures, a fact that is brought up but not dealt with by Hofstede. However, Triandis acknowledges the fact that the multidimensional approach to individualism and collectivism is only important when focusing on self-in-group relationships (within culture). When in the context of examining a broad range of values (as Hofstede did), thinking of individualism/collectivism as one dimension is appropriate since the level of detail in the data is not as important (Triandis, et al., 1988). It should be noted that Triandis's thinking on individualism and collectivism is the currently accepted

model. However, while Triandis has advanced the individualism/collectivism construct and improved on Hofstede's scales, the resulting dimensions mirror closely the dimension produced by Hofstede's work, even if interpreted differently. For example, the "most important" factor for differentiating between cultures (in terms of individualism/collectivism) in the study by Triandis et al. (1988) was Family Integrity, which was significantly rank-order correlated with the individualism/collectivism scores obtained by Hofstede (1980). Despite some differences in approach, both Hofstede and Triandis define the essential nature of the individualism/collectivism construct similarly in terms of reliance on in-groups, desires for achievement, support, security, etc. Hofstede's set of dimensions not only include individualism and collectivism but also offer a more comprehensive view of cultural dimensions rather than the limited theory of Triandis and colleagues.

This is not to say that Hofstede's work goes without contest. There have been questions raised regarding how exhaustive the dimensions are, how generalizable the results of one company are to entire nations, etc (a review of the critiques of Hofstede may be found in Sondergaard, 1994; and Schwartz, 1990 & 1994). However, the same review by Sondergaard (1994) suggested that Hofstede's findings regarding cultural differences are generally supported by replications. Recently, a study by House et al (1995) covering multiple nations and another by Peterson and Smith (1997) have found supportive evidence for the use of Hofstede's dimensions, suggesting that they are still a valid measure even in more recent decades.

Having said all of that, I am not implying that Hofstede's measures are the end-all

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of cross-cultural dimensions. However, twenty years and countless studies later, modern social science has failed to arrive at a definitively more appropriate method for describing the differences between cultures that have been shown to exist. Given this fact, Hofstede's dimensions are not only adequate for the purposes of this study, but also afford the best foundation for comparison to other studies.

Boundaries of Culture

A topic of many debates in cross-cultural research has been the issue of defining the boundaries of culture (Earley & Erez, 1997). The study will make use of country level assumptions about the nature of culture. While I admit that both taking national boundaries as definitions of culture and assuming cultural homogeneity within nations may be a flawed practice (Sego, Hui, & Law, 1997), there is reason to believe that this is not a fatal one. Peterson and Smith (1997) state that, despite their initial intentions to move away from Hofstede's work, all evidence, both theoretical and empirical continued to point towards Hofstede's dimensions as being both a stable and meaningful concept of culture (Frank, Hofstede, & Bong, 1988; Hoppe, 1990; Van de Vliert & Van Yperen, 1996). Overall, Peterson and Smith (1997) come to two important conclusions including that fact that they feel that county is a reasonable, if not the only real surrogate for culture and that Hofstede's country level data still holds meaning in the study of cross-cultural psychology.

From a logical perspective, thinking of country as culture makes sense when one considers the shared experience of those within the country. These shared experiences include but are not limited to geographic location, national social economic status,

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educational systems, political systems, language, typical family structure (i.e., nuclear or extended) and predominant religions. While these shared experiences do not guarantee that all individuals within a culture will be the same, these aspects of a country are likely mechanisms for the development and dissemination of shared values within the borders of a country.

Despite the discussions regarding the problems associated with defining culture based on nation, an agreed upon alternative method has not been developed. Some researchers such as Ronen and Shenkar (1985) have attempted to cluster cultures based on similar country level values. While this clustering technique avoids the practice of studying culture as it pertains to individual nations, it does not solve the problem of differences of culture within nations, which is the primary thrust of most arguments against the use of country as culture. Oddly, amidst all of the talk of within country differences, it has been stated that despite increased interconnectedness of nations and organizations around the globe, differences between national cultures have remained relatively stable and in fact may be increasing (Ali, 1988). As has already been discussed, Hofstede's dimensions have held up to replication and continue to be validated in the 1990s. Based on this information, this study assumes that Hofstede's dimensions provide for a general framework of cultural similarities and differences across nations.

Organizational Attitude Dimensions

There are a number of job attitudes that are of importance in organizations due to their potential relationships with employee behaviors such as performance, citizenship behaviors, withdrawal, and turnover. Two key outcome variables that will be studied in

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the current project are job satisfaction and perceived stress. Potential antecedents of these outcome variables that will also be studied in this project include satisfaction with teamwork, and attitudes about empowerment. This study proposes a model that incorporates these four variables as well as the cultural dimensions that were previously discussed (see Figure1). Specifically, the model depicts the suggested relationships between both empowerment and working in teams with both the job satisfaction and stress variables. Also, as noted, cultural dimensions (individualism/collectivism, power distance and uncertainty) are shown as moderators of these relationships. Each attitude variable that is included in the model is described in the following section along with specific hypotheses regarding culture as a moderator of the relationships among the variables.

Attitudes About Job Satisfaction

The importance of investigating antecedents of job satisfaction becomes evident when one considers the potential outcomes of low or high job satisfaction among employees. Relationships have been found between job satisfaction and turnover (Crampton & Wagner, 1994; Hulin, Roznowski, & Hachiya, 1985), citizenship behaviors (Organ & Ryan, 1995), absenteeism (Farrell & Stamm, 1988; Hackett & Guion, 1985), and employee health (Begley & Czajka, 1993; O'Driscoll & Beehr, 1994), although the evidence for the health relationships has not been convincing (Brief, Burke, George, Robinson & Webster, 1988). Further evidence for the continued interest in job satisfaction comes from recent organizational research aimed at gaining a better understanding of the construct and searching for improved relationships with outcomes

Figure 1

Figure 1

A Model of the Suggested Hypotheses

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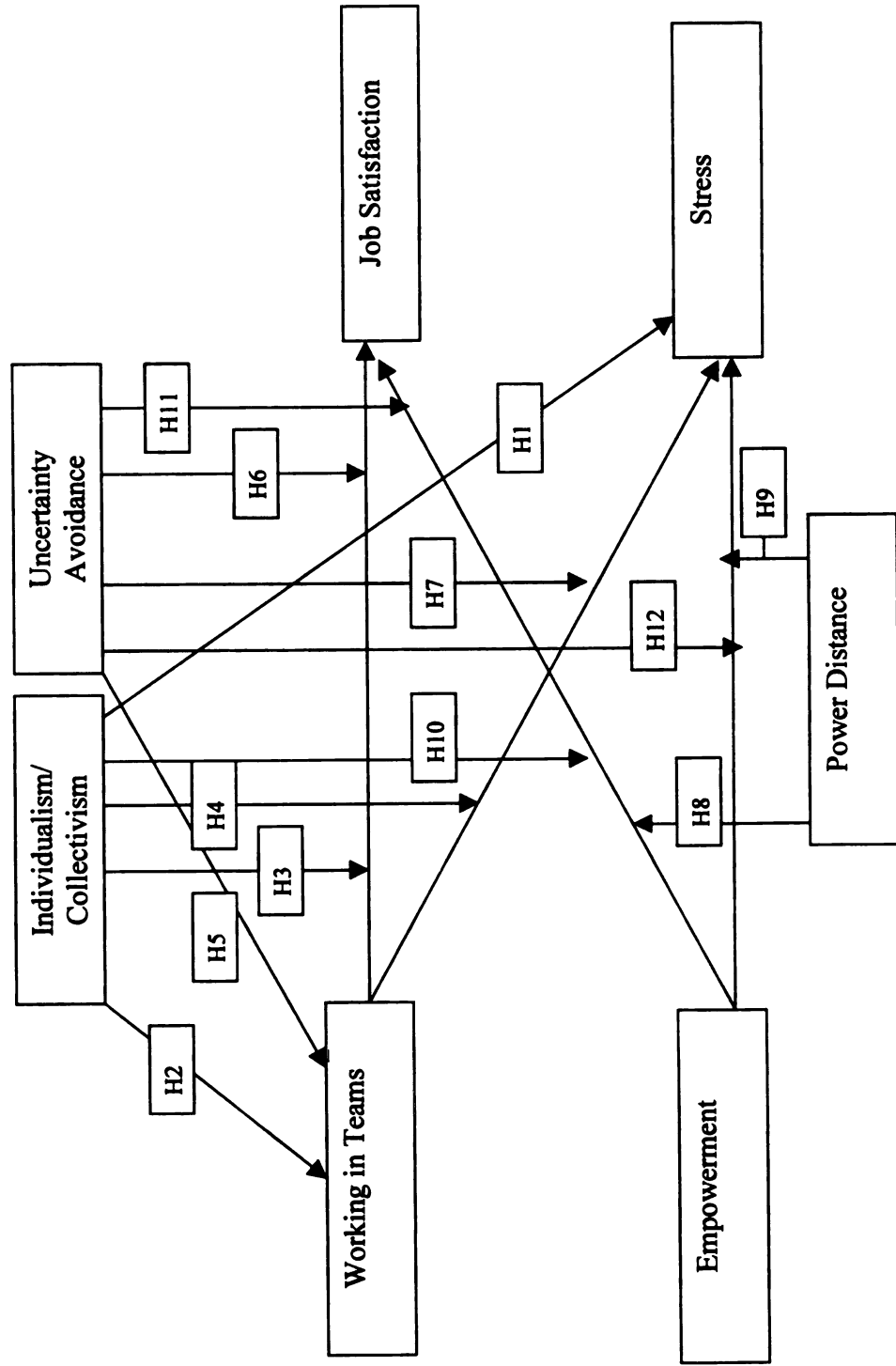
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such as performance (Weiss, Nicholas, & Daus, 1999; Weiss & Cropanzano, 1996; Simon & Carey, 1998; Brief, 1998; Brief, Butcher & Roberson, 1995; Cranny Smith, & Stone 1992; Judge & Hulin, 1993). Despite difficulty in establishing the link between satisfaction and performance, there is reason to believe that satisfaction may be related to improved performance. Two meta-analyses (Iaffaldano & Muchinsky, 1985; Petty, McGee, & Cavender, 1984) found that the correlation between general job satisfaction and performance is somewhere in the high teens to mid-twenties. Thus, it may prove beneficial for organizations to understand potential influences on employee job satisfaction.

Job satisfaction in this study is operationalized by a global satisfaction measure that attempts to tap into the attitude one holds about one's job. While it is acknowledged that many researchers are calling for a component approach to job satisfaction (e.g., global, affective, beliefs, etc.), this study assumes the position of Brief (1998) and Brief and Roberson (1989) which contends that the global operationalization of job satisfaction contains the aforementioned sub-components. Additional support for this definition of job satisfaction stems from positions taken by Hulin (1991), and Locke (1976) who both propose that general attitudes about satisfaction encompass affective components of job satisfaction.

A point of interest that has emerged from the continued investigation of job satisfaction is the suggestion that job satisfaction may be influenced by both the job and work environment, as well as dispositional factors (Gerhart, 1987; Staw & Ross, 1985). It is further suggested that dispositional factors with potential to influence job satisfaction

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may develop as a function of genetic inheritance or by way of social learning (Staw, Bell, & Clausen, 1986). Based on these ideas, is it not possible that culture may play a role in the development of dispositional factors? For example, it has been suggested that national culture may influence the development of values (Schwartz, 1994). That makes sense when one considers that the definition of culture assumes shared values among individuals within a given culture.. Culture has also been studied in terms of its influences on self-concept (Gudykunst et al, 1994), emotion (Frijda & Mesquita, 1994), attributions (Shweder & Bourne, 1982), and personality (Ip & Bond, 1995). The idea that dispositional factors may predispose people to react to environmental factors in certain ways, thereby influencing the resultant experienced job satisfaction is a position which has gained support in the literature (Arvey, Bouchard, Segal, & Abraham, 1989; Gerhart, 1987; Levin & Stokes, 1989; Pulakos & Schmitt, 1983; Staw & Ross, 1985; Staw et al, 1986; Weitz, 1952). Could these shared culturally developed dispositions predispose individuals to react more stongly to positive or negative attitudes about working in teams or levels of empowerment? That is, as the model may suggest, will positive attitudes about working in teams or being empowered be more highly related to overall job satisfaction for individuals from cultures that are predisposed to value teamwork or autonomy? The literature suggests that there is reason to believe that culture may indeed influence experienced job satisfaction. For example, differences in overall job satisfaction between cultures have been reported for comparisons of Mexican to American workers, (Slocum & Topichak, 1972), as well as comparisons of Japanese to Americans (Lincoln, Hanada, & Olsen, 1981; Smith & Misumi, 1989). Spector and

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Wimalasiri (1986) have even shown that cultures with similar overall job satisfaction

levels may vary with regard to satisfaction with sub-components of the job (e.g.,

supervision, pay, promotion opportunities). Studies such as these show promise for the

continued investigation of differential influences of culture on satisfaction. The current

study builds on the literature by attempting to ascertain whether cultural differences

influence satisfaction by acting as a moderator between antecedents of satisfaction, and

reported job satisfaction. While some of the antecedents of satisfaction will be discussed

shortly, I will next cover the topic of workplace stress.

Attitudes about Stress

While there still exists some disagreement over what the exact definition of stress

in the workplace is (Kahn & Byosiere, 1992), the potential effects of stress have been

fairly well documented, as will be discussed next. Of obvious interest for organizations is

the fact that stress has been found to have influence on performance and employee health

(Appley & Trumbull, 1986). Some examples of the potential psychological responses to

stress have been shown to be anxiety (Caplan & Jones, 1975), depression (LaRocco,

House, & French, 1980; Caplan & Jones, 1975) job dissatisfaction (Ganster, Fusilier, &

Mayes, 1986; Ivancevich, Matteson, & Preston, 1982), and decreased health (Cooper &

Roden, 1985; Williams & Stout, 1985; Rhodewalt & Agustodottir, 1984). While these

stress responses may create costs for organizations (Jones, 1984), they primarily affect the

individual. Of perhaps even more importance to organizations is the fact that stress

responses have been shown to relate to behavioral responses as well. Some examples of

these behavioral responses include increased absenteeism (Jackson, 1983), increased

accident rates (Jones, 1984; Colquhoren, 1976), counterproductive behaviors (e.g.,

damaging property, stealing, slacking off) (Mangione & Quinn, 1975), and perhaps most

importantly, influence on job performance (although results have been mixed) (Weiss &

Cropanzano, 1996; Lazarus, 1991; Kaufman & Beehr, 1986; Mossholder, Bedeian, &

Armenakis, 1982; Buck, 1972).

While it is evident that workplace stress and the potential responses to stress may

be of importance to organizations and employees, what is not so obvious is when

potential stressors are realized by a person or group of people as actual stress. Jex and

Beehr (1991) make an important distinction between stressors and strain. They suggest

that stressors are conditions at work that require an adaptive response while strains are

aversive reactions to a stressor. This separation of concepts allows for the scenario that

not all individuals will react to potentially stressful events in the same way; individuals

must perceive a stressor as a negative challenge or threat in order for actual stress (or

strain) to be experienced (Jex & Beehr, 1991; Frese & Zapf, 1988). Based on this idea, it

has been suggested that stress research should more adequately address potential

moderators (e.g., personal characteristics, social development, and genetic characteristics)

of the relationships between stressors and strains. (Kahn & Byosiere, 1992). The

proposed model suggests that one such potential moderator of those relationships may be

national culture.

Research findings show some support for the idea that responses to stressors may

vary by culture. For example, using Hofstede's cultural dimensions, Peterson and Smith

(1995) found that role stress varied more by culture than by either demographics or

organizational factors. Other studies have also shown that cultures may differ with regard to the extent to which a potential stressor is perceived as stress. Cooper (1984) found variance between managers in ten countries on their "pressure profiles" or primary stress stimulus. For example, Swedish managers reported home/work conflicts to be particularly troubling, US managers named power issues as a primary stressor, and Japanese managers were most bothered by work overload (Cooper, 1984). Bhagat, et al.(1994) conducted a 7 nation study and also found that the stressor to strain relationship depended at least partially on culture, specifically on collectivist nations' tendencies to experience less perceived stress. This finding is explained by the nature of individualist and collectivist cultures. Triandis et al. (1988) discuss the tendencies of individuals within collectivist cultures to have more social cohesion, more social support, more in-group harmony, and less insecurity than individualists. Individuals from Individualist cultures not only lack those tendencies of people in collectivist nations, but also tend to emphasize self-reliance and competition which increases insecurities about seeking social support as a means of coping (Triandis et al., 1988). Based on this information, the following hypothesis is proposed:

H1: Individuals from cultures high on collectivism will report less perceived stress than individuals from cultures high on individualism.

There have been other large and small-scale studies that further support the concept of cultural differences in perceived stress, most of which involved two nation comparisons. For example, a comparison of police in Germany to those in Ireland found differences regarding external versus internal sources of stress, as well as differing styles

of coping between the two nations (Kirkcaldy, Brown, & Cooper, 1994). Other examples of dual nation comparisons have shown that types of prominent stressors and coping styles differ between British and German managers (Kirkcaldy & Cooper, 1992), and that interdependency in an independence oriented culture leads to increased stress (Cross, 1995). The primary thrust of these studies is that aspects of culture such as the amount of social support one can expect and values such as self reliance appear to moderate the relationships between potential stressors and experienced stress or strain. This study suggests that attitudes about aspects of the job including working in teams and levels of empowerment are potential stressors and therefore may be related to reported experienced stress as I will discuss shortly. The proposed model incorporates those relationships and further suggests that dimensions of culture moderate those relationships.

Attitudes about Teams

Teams have become embedded so strongly in organizations that the very nature of how work is performed in an organization is dependent on team structures and how people behave within those structures. Many researchers agree that workgroups and teams have become a pervasive and important aspect of organizations (Guzzo & Shea, 1992; Magjuka & Baldwin, 1991; Hackman, 1990). Given the importance of teams in the workplace, researchers have sought to understand both the nature of, and the effectiveness of work teams (Hackman, 1992). However, despite the increased attention given to research on teams, there has been a lack of focus on how the team-based nature of work is perceived by different cultures. Most researchers agree that as organizations continue to grow into global corporations, an understanding of cultural influences on teams will

become increasingly important (Guzzo & Salas, 1995). The model presented in this study proposes that there are relationships between attitudes about working in teams and both overall job satisfaction and stress. It further suggests that dimensions of culture will moderate these relationships.

One outcome of the research that has been conducted on teams is the finding that aside from just performance, working in teams may influence attitudes about satisfaction or perceived stress on the job (Hackman, 1987; Bass, 1982). Support for a relationship between teamwork and satisfaction has been suggested by research defining satisfaction as a component of team effectiveness which may vary depending on the nature of the team (Sundstrom, De Meuse, & Futrell, 1990; Hackman, 1987; Wall, Kemp, Jackson, & Clegg, 1986; Gladstein, 1984). For example, a team that fulfills all of its production requirements may still lead to dissatisfaction among certain team members if they feel that others in the group were not doing their share of the work. Research has found that working in teams may have both positive and negative relationships with job satisfaction depending on a number of factors ranging from contextual (e.g., group composition, group task) to dispositional (Lindermen, 1998). Of more specific interest for the purposes of this study are examples that show that experiences of working in teams relate differently to levels of satisfaction as a function of affiliation with certain cultures. For example, Hui and Yee (1999) found that collectivist tendencies in Hong Kong were related to increased teamwork/job-satisfaction relationships. Studies such as this suggest that the cultural dimension of individualism/collectivism may moderate the relationship between teamwork and satisfaction.

According to Hofstede, cultures high on individualism will tend to focus on individual self-interest, even when operating in a group. Individual rewards, status, and self-reliance are important within individualistic cultures. Collectivist cultures on the other hand will tend to orient more towards group benefit and support structures. In these cultures, self-interests are subordinate to group success (Hofstede, 1980). That being said, researchers have pointed out that interdependency (Salas, Dickinson, Converse, & Tannenbaum, 1992; Tannenbaum, Beard, & Salas, 1992), responsibility for other's work (Kiggundu, 1983), and group level rewards (Shea & Guzzo, 1987) are all key aspects of working in teams. These commonalties of group work fit more closely with Hofstede's definition of collectivism than with individualism. Furthermore, a preference for group work has been shown to be related to higher satisfaction derived from working in groups (Fried & Ferris, 1987; Cummings, 1981; Hackman & Oldham, 1980).

Taken as a whole, these findings suggest that individuals from collectivist cultures should find working in teams to be a more rewarding and satisfying process than people from individualistic cultures who may find teams to be a stressful distraction from individual pursuits of recognition and reward. Furthermore, increased satisfaction with the experience of working in teams (i.e. workers that are satisfied with sharing responsibility, and interdependency) is likely to have more of an influence on overall job satisfaction for individuals from cultures that value successful collective efforts. Therefore, the following hypotheses are proposed:

H2: Individuals from cultures high on collectivism will report higher levels of satisfaction with teamwork than individuals from cultures high on individualism.

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H3: The relationship between satisfaction with teamwork and job satisfaction will

be stronger and more positive for individuals from cultures that are high on

collectivism.

There is also evidence that working in teams may produce potential stressors that

employees must deal with (see Bass 1982; Morgan & Lassiter, 1992; for reviews of this

literature). I previously mentioned research that pointed out that interdependence,

responsibility for others' work, and group rewards are commonly associated with working

in teams. It may be that these common aspects of working in teams are likely to be more

appealing and satisfying for individuals from collectivist cultures who orient more

towards group benefit and support. However, what might be the effect on the relationship

between team satisfaction and stress for individuals from cultures that are high on

collectivism if the cohesiveness, performance, interpersonal interactions, etc. break down

within a team? In a summary of empirical evidence, Ivancevich and Matteson (1980)

suggest that group dissatisfaction is a potential antecedent of stress. The lack of

satisfaction with team membership may be a more significant factor in the amount of

reported stress for cultures that highly value group success, support, and a sense of

belonging. Therefore, individuals from cultures high on collectivism that are dissatisfied

with team work will also report high levels of stress, while those satisfied with teamwork

will report moderate to low levels of stress.

H4: The relationship between satisfaction with teamwork and stress will be

stronger and more negative for cultures that are high on collectivism.

It is acknowledged that this hypothesis predicts a more negative relationship

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between satisfaction with teamwork and stress for individuals from collectivist cultures while H3 predicts a positive relationship between satisfaction with teamwork and job satisfaction for the same individuals. The opposite direction of the relationships hypothesized in H3 and H4 does not present a problem due to the finding that stress and satisfaction are generally uncorrelated (Brief, 1998).

Along with individualism/collectivism, this study also proposes that the cultural dimension of uncertainty avoidance moderates relationships between work attitude variables. Individuals from cultures that are high in uncertainty avoidance tend to prefer stable and predictable situations, clearly defined roles, and straightforward directions, while individuals from cultures low on uncertainty avoidance tend to be less bothered by variability and ambiguity (Triandis, 1990). Might the previously discussed relationships between working in teams and stress or satisfaction also be moderated by the uncertainty avoidance dimension? It has been shown that working in teams provides situations which may produce uncertainty for employees. For example, teamwork is sometimes prone to producing interpersonal conflicts and desires to discontinue working in the group (Hackman, 1980; Alderfer, 1977). Also, Cannon-Bowers, Oser, and Flanagan (1992) point out how frequently work teams are at the same time both highly autonomous and highly interdependent. The potential conflict that arises from these dual characteristics of common work teams has not gone unnoticed in the literature (Janz, Colquitt, & Noe, 1997). This conflict may place strain on employees who have difficulty balancing the autonomous nature of their team (or their role in the team) with the demand for aspects of interdependency such as sharing information or being responsible for other's work.

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There is also evidence that teamwork produces multiple potential stressors such as role overload, ambiguity, and interpersonal contact (Morgan & Bowers, 1995).

These combined aspects of teamwork suggest that working in teams may create situations where roles are less well-defined, interpersonal interactions are less predictable due to conflict, and tensions between autonomy and interdependency create confusion. These are all scenarios which people from cultures with tendencies towards avoiding uncertainty may not find particularly enjoyable. Therefore:

H5: Individuals from cultures high on uncertainty avoidance will report less satisfaction with teamwork than individuals from cultures that are low on uncertainty avoidance.

Dissatisfaction with working in one's team is likely to influence an employee's overall job satisfaction (Hackman, 1987). However, dealing with the interpersonal conflict, role ambiguities, overload, desires to quit a team, and other factors that may lead to dissatisfaction with teamwork are likely to have a larger impact on job satisfaction for individuals from cultures that prefer stability and clearly defined roles. It will be suggested that cultures high on uncertainty avoidance are more apt to find coping with teamwork and dealing with teams that are unsatisfying to be more stressful, and more closely related to decreased job satisfaction. Hence, the following hypotheses are proposed:

H6: The relationship between satisfaction with teamwork and job satisfaction will be more strong for individuals from cultures that are high on uncertainty avoidance than for individuals from cultures that are low on uncertainty

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H7: The relationship between satisfaction with teamwork and stress will be more

strong and negative for individuals from cultures high on uncertainty avoidance

that for individuals from cultures low on uncertainty avoidance.

Attitudes about Empowerment

The final piece of the model that has yet to be discussed is empowerment.

Worker empowerment remains a topic of interest, and one of importance in practice

(Thomas & Velthouse, 1990; Kanter, 1989). Allowing employees to oversee a

meaningful task while also increasing their responsibility, autonomy, ability to self-

monitor, and to make decisions has been purported to have a positive influence on

employee proactivity, satisfaction and productivity (Spreitzer, 1995; Thomas & Tymon,

1994; Spreitzer, Kizilos, & Nason, 1997; Hyatt & Ruddy, 1997). While links to

performance have been difficult to establish (Griffen, Welsh, & Moorehead 1981),

evidence of relationships between empowerment with job satisfaction and stress has been

more easily discovered. Kirkman and Rosen (1999), and Koberg et al. (1999) have

recently found evidence that empowered employees and empowered work teams report

higher levels of overall job satisfaction. It has also been shown that a lack of

empowerment was related to increased dissatisfaction (Caplan et al., 1984). There is also

some evidence that certain aspects of empowerment (e.g., decisions about how to

implement change) may be more highly related to satisfaction than others (e.g., decisions

about whether or not to implement a change) (Sagie & Koslowsky, 1994). Despite some

debate over the components of empowerment that are related to worker satisfaction, even

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researchers who disagree with each other in the literature have agreed that empowerment and satisfaction are somewhat related (Locke, Schweiger, & Latham, 1984; Sashkin, 1984).

While it appears to be the case that empowered workers tend to be more satisfied workers, there is some debate in the literature regarding the relationship between empowerment and the perceived stress levels of employees. Suggesting that the increased workloads, decision latitude, responsibility, and other aspects of empowerment are a negative influence on employees' attitudes, some recent findings conclude that increased empowerment leads to increases in perceived stress (Mishra & Spreitzer, 1998; Sutherland, Fogerty & Pithers, 1995). However, others have shown that empowered workers report lower levels of stress (Jackson, 1983), even when compared to their less-empowered co-workers of equal status in the same organization (French & Caplan, 1972).

Researchers and practitioners may find it useful to know what types of environments and people will react positively to empowerment programs. It has been suggested that attitudes regarding participation are prominently influenced by developed norms and experience with participation programs (French, Kay, & Meyer, 1966). Culture may play a role in developing norms and dictating the likelihood that members of the culture have had contact with empowerment programs. Thus, the current study suggests that three of Hofstede's dimensions of culture (power distance, individualism/collectivism, and uncertainty avoidance) may moderate the relationships between empowerment and satisfaction, and empowerment and stress. A discussion of each of these dimensions and rationale for hypotheses involving the influence of cultural

dimensions as moderators follows.

Hofstede's power distance dimension suggests that cultures that are high in power distance will tend to have more autocratic and authoritative styles of leadership. Employees are expected to follow established patterns of communication and are heavily dependent on supervision and the organization for instruction. Individuals from low power distance nations on the other hand are less dependent on supervision and a chain of command. Employees are treated more as equals and are more involved in decision making processes, and determining the exact nature of their own work (Hofstede, 1980). Research has shown that cultural groups that vary on the power distance dimension perceive employee participation in decision-making differently. The majority of research on this topic concludes that individuals from cultures that are low in power distance are likely to prefer, or benefit from increased participation due to flattened organizational structures and a low tolerance for inequalities in power (Erez & Earley, 1987; Erez, 1986; Erez & Arad, 1986; Rodrigues, 1990). It is suggested that individuals from high power distance cultures will not benefit as much, or will not prefer increased participation due to high tolerances for inequality, a tendency to rely on superiors for direction, and a tendency to accept directions or goals, even when opposed to them (Erez & Earley, 1987; Rodrigues, 1990). In fact, a recent study by Robert, Probst, Martocchio, Drasgow, and Lawler (2000) involving four countries (U.S., Mexico, India, and Poland) found that the relationship between empowerment and satisfaction differed between countries. Without specifically incorporating cultural dimension scores in the analysis of their model (they simply looked at the country standings on the power distance dimension), they assert that

the differences may be due to different levels of power distance. Their findings provide further support that higher power distance may be related to decreased or negative relationships between empowerment and satisfaction.

Given that the empowerment items used in this study measure the presence of or lack of empowerment rather than actual satisfaction with empowerment, the following hypothesis is suggested:

H8: The relationship between empowerment and job satisfaction will be more positive for individuals from cultures that are low on power distance than for individuals from cultures that are high on power distance.

Research has also shown that power distance is closely linked to role stresses. Peterson and Smith (1995) found that those in high power distance nations reported higher levels of role overload than low power distance nations. They state that this is likely a result of overload due to work events or role structure stresses. This finding is in line with Goffman (1961) who suggested that organizations within high power distance nations are likely to incorporate dysfunctional role structures that are too rigid and serve to compound role stresses. Empowerment typically is considered to involve most of the following: increased autonomy, power to make decisions, access to information used to make decisions, goal setting, problem solving, planning for change, and change implementation (Spreitzer, 1995; Sashkin, 1984). By the very nature of its general definition, empowerment is likely to increase the demands placed on the roles of the workers. Following from findings such as Peterson and Smith(1995) and Goffman (1961), nations high on power distance are likely to have organizational structures and

employee roles that are inadequately designed for coping with the increased workload. Therefore, the increased overload of responsibility would create more potential stressors for those used to operating in a more controlled, passive environment.

H9: The relationship between empowerment and stress will be higher and more positive for individuals from cultures that are high on power distance.

There is also reason to believe that perceptions of empowerment may differ as a function of the previously discussed cultural dimension of individualism/collectivism. People from individualistic cultures emphasize the benefits of autonomy, personal freedom by way of participation in decision making, decentralized decision-making, and employee centered incentive systems (Earley & Gibson, 1998). It has been suggested that individuals from individualistic cultures should prefer a more participative work environment as it increases their opportunities to promote self-interests. This idea makes sense when comparing the basic components of empowerment (autonomy, freedom to set goals, implementing changes, decision making power, etc) with the basic desires of individualists (autonomy, freedom to succeed, ability to manage one's own work life, etc.). The opportunities allotted by empowerment appear to coincide with many aspects of individualistic preferences. Offering some support, Near (1986) found that freedom on the job was related to higher levels of satisfaction for US workers high on individualism (Hofstede, 1980), but was not related to satisfaction for Japanese workers high on collectivism (Hofstede, 1980). Lawler (1986) has also pointed out that individual level rewards are a key component of empowerment in organizations. Following from this discussion, this study proposes that the increased autonomy, power in decision making,

opportunities to seek and receive rewards, etc. would be more pleasing to those in cultures with individualistic tendencies.

H10: The relationship between empowerment and satisfaction will be more positive for individuals from cultures that are high on individualism.

Attitudes about empowerment may also vary across cultures depending on cultural tendencies towards uncertainty avoidance. As stated earlier, empowerment in organizations typically involves a situation where employees are given more responsibility for making and implementing changes, power to make decisions, freedom to set goals, and in general a freedom to manage their own role within the organization. It has also been discussed that reported stressful reactions to increased empowerment vary from study to study. Might culture explain some of this variance? Peterson and Smith, (1995) suggest that work events carry with them a certain level of ambiguity. Work can also create role conflicts by introducing previously unattended to stimuli to an employee that must be dealt with. The general definition of empowerment changes forms slightly from article to article. However, the general thrust of each definition makes it clear that empowerment in the work place is likely to provide more responsibility for employees to manage and new challenges to be dealt with. According to Hofstede (1980), individuals from cultures high on uncertainty avoidance are likely to react more negatively to, and possibly perceive more stress as a result of increased and sometimes vague role responsibilities.

H11: The relationship between empowerment and job satisfaction will be lower for individuals from cultures that are high on uncertainty avoidance than for those

low on uncertainty avoidance.

H12: The relationship between empowerment and stress will be stronger and more

positive for individuals from cultures that are high on uncertainty avoidance.

Method

<u>Sample</u>

Participants were salaried employees of a global manufacturing organization.

Data were collected anonymously from employees during internal census surveys in

1996, 1998, and 1999. It should be noted that the 1996 data were collected using paper

and pencil questionnaires while the 1998 and 1999 data were collected using computers.

Responses to the 1996 questionnaire were obtained from 53,298 individual respondents,

from a total of 28 countries. Responses to the1998 questionnaire totaled 63,277

employees from 28 different countries. Responses to the 1998 questionnaire were

obtained from 62,345 employees from 28 different countries. For a list of the included

nations, see Table 1.

<u>Job Attitude Measure</u>

All questionnaires were developed internally by the organization. Item response

format for this survey was a Likert-type scale, consisting of a five-option answer format

ranging from "Strongly disagree" to "Strongly Agree". The organization developed the

response option scales in the opposite direction than is normally found such that a

response of "1" meant, "Strongly agree", and "5" meant, "Strongly disagree." These

items were reverse coded in order to fit with traditional methods, and to ease the

interpretation of analyses. The 1996, 1998, and 1999 questionnaires consisted of 34, 40,

Table 1

Included Countries and Scores on Hofstede's Dimensions.

Country	N for 1996	N for 1998	N for 1999	Uncertainty Avoidance Score	Power Distance Score	Individualism/ Collectivism Score
1. Argentina	577	657	647	86	49	46
2. Australia	1,010	1,562	1151	51	36	90
3. Austria	29	51	57	70	11	55
4. Belgium	504	510	557	94	65	75
5. Brazil	1,667	2,063	1,963	76	69	38
6. Canada	2,045	2,357	2,338	48	39	80
7. Denmark	42	73	69	23	18	74
8. Finland	21	105	49	59	33	63
9. France	494	572	725	86	68	71
10. Germany	3,250	4,233	4,830	65	35	67
11. Greece	23	34	35	112	60	35
12. India	9	22	347	40	77	48
13. Ireland	29	23	80	35	28	70
14. Japan	254	486	362	92	54	46
15. Mexico	4,143	5,577	2,101	82	81	30

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Table 1 continued

Country	N for 1996	N for 1998	N for 1999	Uncertainty Avoidance Score	Power Distance Score	Individualism/ Collectivism Score
16. Netherlands	39	101	79	53	38	80
17. New Zealand	132	113	110	49	22	79
18. Norway	25	49	55	50	31	69
19. Portugal	278	287	239	104	63	27
20. South Africa	4	26	28	49	49	65
21. Spain	704	831	850	86	57	51
22. Sweden	32	61	44	29	31	71
23. Switzerland	37	64	74	58	34	68
24. Taiwan	559	538	514	69	58	17
25. Thailand	3	695	1,350	64	64	20
26. UK	4,360	5,772	7,017	35	35	89
27. USA	32,083	33,984	32,912	46	40	91
28. Venezuela	246	349	341	76	81	12

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and 40 core items respectively, and were originally designed to tap into nine different core dimensions (job and company (job satisfaction), stress, workgroup and team, empowerment, reward and recognition, training & development, supervision, workload, and quality). The total number of items differs due to new items being added to the same scales between the 1996 and 1998 administrations of the questionnaire. However, factor analytic techniques revealed that the nine dimensions did not hold up across cultures (Horvath, Ryan, & Ployhart, 1998). In a report to the organization that administered the questionnaire, Horvath, Ryan, and Ployhart (1998) discuss a confirmatory factor analysis of the 1998 questionnaire across 17 different nations that revealed that certain items loaded consistently on four dimensions across cultures.

The four factors that appeared were satisfaction/feeling valued, stress, satisfaction with workgroup and team, and supervision/empowerment. Ten items did not load consistently on any factors, most likely due to differences in meaning of these items across cultures (Horvath, Ryan, & Ployhart, 1998). This study used the clusters of items that formed the four factors as measures of the organizational attitude variables that have been discussed in this paper. The benefit of using these factor consistent scales is that it allows for discussion and interpretation of questionnaire items and their relationships across cultures. It should be noted that this study used only the empowerment items from the supervision/empowerment scale. These items tap into attitudes about empowerment rather than addressing attitudes about supervisors.

Items for the four dimensions (for 1996, 1998, and 1999) may be found in Appendix A. Each of the scales will be discussed next. In the following section, please

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note that all references to the construct validity refer to analysis conducted for a report to the organization by Horvath, Ployhart, and Ryan (1998). The analyses that they conducted made use of a sample of 177 college business students at a large mid-western university. They could not use the actual employees of an organization due to the necessity of administering a battery of additional tests, combined with the fact that the original organizational questionnaire was anonymous.

The job satisfaction scale consists of five items that measure overall satisfaction with the organization and satisfaction with feeling valued by the organization.

The stress scale measures the extent to which employees report experiencing excessive amounts of workplace stress. The 1996 stress scale consisted of four items that focused on the level of stress and workload being experienced. The 1998 and 1999 stress scales included three of those same four items but also added six more items that were intended to assess how well experienced workplace stress was being coped with, as well as additional workload items. The stress scale items in Appendix A are denoted as belonging to only the 1996 scale, the 1998 and 1999 scale, and to all scales. The 1996 stress scale was correlated (r = .55) with the stress in general scale that was developed by Smith et al. (1992).

The satisfaction with teamwork scale in 1996 consisted of seven items that attempt to measure levels of satisfaction with team cooperation and effectiveness. Two of these items were dropped for the 1998 and 1999 scale. Evidence of convergent validity for a subset of these items is indicated by correlations with measures of team related constructs such as the Team Orientation Questionnaire (r = .45) (Isabella &

Waddock, 1994), sub-factors of the Work Group Characteristics scale (Ruddy & Hyatt, 1997) including work group support (r = .65), work group confidence (r = .65), and interpersonal work group processes (r = .53).

The empowerment scale consists of three items. These items were designed to measure the extent to which employees felt that they had autonomy, decision-making power, and participation in setting objectives, and the opportunity to self-evaluate.

Cultural Dimension Measurement

In order to assess differences between cultures, this study used three of the four cultural dimensions developed by Geert Hofstede: individualism/collectivism, power distance, and uncertainty avoidance. The development of these dimensions arose from the analysis of survey data collected twice within a large multinational organization. The data was collected over the span of 1967 to 1969, as well as from 1971 to 1973, with a total of approximately 117,000 responses to the questionnaire. The cross-cultural analysis of this was conducted on a total of 40 different countries using only those with at least fifty responses. Drawing from early works describing the dimensions of power distance (e.g, Mulder, Ritsema Van Eck, & De Jong, 1971), uncertainty avoidance (e.g., Cyert & March, 1963), and individualism/collectivism (e.g., Etzioni, 1975; Kluckhohn & Strodtbeck, 1961; Parsons & Shils, 1951) Hofstede selected items from the questionnaire that had content similar to the proposed dimensions of culture.

Power Distance: The PDI ranges between 0 and 100 with high scores meaning more power distance. Country scores in Hofstede's study ranged from a low score of 11 (for Austria) to 94 (for Philippines) with a mean country score of 52 (n = 40) (Hofstede,

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1980). In the current study, the included countries' PDI scores ranged from 11 to 81 with a mean of 47.4 and a standard deviation of 19.3. PDI scores for countries included in this study are located in Table 1.

Uncertainty Avoidance: The UAI has a range of values from 8, the least amount of uncertainty avoidance (Singapore), to 112, the most uncertainty avoidance (Greece). The mean score on the UAI in Hofstede's sample was 64 (n = 40). The range of scores on the UAI for countries included in this study is 23 to 112, with a mean of 63.8 and a standard deviation of 23.1. UAI scores for countries included in this study are located in Table 1.

Individualism/Collectivism: scores on the IDV index fall within a range of 0 to 100 where higher scores mean more individualism. In Hofstede's sample, an actual range of values from 12 (Venezuela) to 91 (United States) was obtained with a mean individualism/collectivism score of 51. In the current study, country scores on the IDV ranged from 12 to 91, with a mean of 58.1 and a standard deviation of 22.9. IDV scores for countries included in this study are located in Table 1.

Results

It should once again be noted that due to the anonymous nature of the data obtained from the questionnaire, important links between administrations of the survey could not be made. This fact made it impossible to track responses over time, resulting in an inability to analyze the data across the three administration periods. Therefore, means and standard deviations of job satisfaction, satisfaction with working in teams, empowerment, and stress are provided for each country for the years 1996, 1998, and 1999 in Tables 2, 3, and 4 respectively. Individual level correlations of those same

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variables across countries, as well as the reliabilities of the scales may be found in Table

5 for 1996 data, Table 6 for 1998 data, and Table 7 for 1999 data.

The following section will discuss the outcome of the analyses that tested both the

direct effect and moderation hypotheses that are under investigation in this study.

However, preceding the results of this study is an overview of Hierarchical Linear

Modeling (HLM) and the models used to test the actual data.

As stated earlier, the data in this study were analyzed using HLM techniques. The

hierarchical nature of HLM implies that individuals may be studied not only as

individuals, but also as collective groups ranging across many levels (i.e., teams,

departments, organizations, and countries). For the purposes of discussing the analyses,

the data collected at the individual level will also be referred to as level-1 data later in this

section. This data includes each employee's individual ratings of job satisfaction,

satisfaction with teamwork, empowerment, and stress. The data that has been aggregated

to a higher group level (in this study the mean country level scores on power distance,

uncertainty avoidance, and individualism/collectivism based on Hofstede's research) will

be referred to as level-2 data.

HLM is designed to investigate models that involve relationships between both

individual and group level data. While ordinary-least-squares (OLS) regression analyses

could also be employed, HLM offers two primary advantages. The first of these

advantages is highlighted by the fact that HLM techniques model both the individual and

group level variance. This allows for the inclusion of potentially meaningful information

regarding the levels of independence/interdependence of individuals' responses to the

Table 2

Means and Standard Deviations of Study Variables by Country for 1996 Data

Country	N	Job Satisfaction		Stress		Satisfaction with Teamwork		Empowerment	
		$\overline{X}$	SD	$\overline{X}$	SD	$\overline{X}$	SD	$\overline{X}$	SD
1. Argentina	577	2.63	.83	2.81	.66	2.33	.71	2.27	.90
2. Australia	1,010	2.52	.80	2.89	.63	2.15	.58	2.17	.73
3. Austria	29	2.36	.67	2.76	.66	2.11	.60	2.34	.76
4. Belgium	504	2.47	.79	2.65	.59	2.10	.62	2.31	.86
5. Brazil	1,667	2.67	.90	2.98	.72	2.44	.70	2.29	.95
6. Canada	2,045	2.47	.93	2.86	.69	2.12	.67	2.14	.88
7. Denmark	42	2.32	.52	2.84	.52	2.38	.55	2.48	.78
8. Finland	21	1.90	.58	2.44	.58	1.99	.57	1.93	.61
9. France	494	2.43	.73	2.75	.63	2.21	.64	2.30	.91
10. Germany	3,250	2.57	.76	2.66	.56	2.26	.61	2.38	.89
11. Greece	23	2.40	.79	2.84	.63	2.53	.70	2.38	.91
12. India	9	2.33	.69	2.81	.62	2.37	.69	1.74	.40
13. Ireland	29	2.73	.90	2.81	.67	2.10	.68	2.31	.86

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Table 2 continued

Country	N	Job Satisfaction		Stress		Satisfaction with Teamwork		Empowerment	
		$\overline{X}$	SD	$\overline{X}$	SD	$\overline{X}$	SD	$\overline{X}$	SD
14. Japan	254	2.68	.75	2.92	.63	2.42	.65	2.63	.89
15. Mexico	4,143	2.28	.82	2.54	.67	2.09	.74	2.18	.90
16. Netherlands	39	2.24	.74	2.32	.54	2.09	.82	2.11	.75
17. New Zealand	132	2.78	.94	2.91	.73	2.34	.67	2.4	.93
18. Norway	25	2.57	.88	2.68	.74	2.65	.67	2.35	1.05
19. Portugal	278	2.73	.90	2.92	.57	2.51	.66	2.37	.90
20. South Africa	4	1.40	.43	2.81	.85	1.79	.55	1.75	1.29
21. Spain	704	2.50	.79	2.78	.62	2.20	.66	2.50	.98
22. Sweden	32	2.64	.92	2.91	.67	2.30	.53	2.52	1.06
23. Switzerland	37	1.91	.61	2.48	.67	1.87	.69	2.14	.85
24. Taiwan	559	2.31	.65	2.57	.62	1.91	.62	2.26	.82
25. Thailand	3	1.76	.60	2.92	.88	1.71	.29	1.67	.58
26. UK	4360	2.83	.86	2.91	.61	2.41	.65	2.41	.88
27. USA	32083	2.56	.92	2.82	.67	2.19	.69	2.14	.91

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Table 2 continued

Country	N	Job Satisfaction		Stress		Satisfaction with Teamwork		Empowerment	
		$\overline{X}$	SD	$\overline{X}$	SD	$\overline{X}$	SD	$\overline{X}$	SD
28. Venezuela	246	2.47	.91	2.82	.74	2.11	.69	2.06	.88

Note. Results for Job Satisfaction, Stress, Satisfaction with Teamwork, and Empowerment are based on responses on 5-point scales (answer options: 1 – 5). Please note that in this data, 1 = Strongly Disagree while 5 = Strongly Agree.

Table 3

Means and Standard Deviations of Study Variables by Country for 1998 Data

Country	N	Job Satisfaction		Stress		Satisfaction with Teamwork		Empowerment	
		$\overline{X}$	SD	$\overline{X}$	SD	$\overline{X}$	SD	$\overline{X}$	SD
1. Argentina	657	2.67	.84	3.10	.83	2.35	.69	2.23	.93
2. Australia	1,562	2.59	.92	2.97	.84	2.27	.70	2.34	.86
3. Austria	51	2.22	.64	3.05	.81	2.15	.49	2.25	.73
4. Belgium	510	2.44	.87	2.71	.80	2.19	.68	2.24	.87
5. Brazil	2,063	2.44	.87	3.14	.88	2.40	.70	2.12	.87
6. Canada	2,357	2.40	.97	2.85	1.01	2.10	.70	2.12	.95
7. Denmark	73	2.35	.77	3.08	.87	2.43	.53	2.42	.74
8. Finland	105	2.19	.79	2.70	.85	2.18	.69	2.06	.69
9. France	572	2.35	.79	2.74	.82	2.15	.65	2.16	.84
10. Germany	4,233	2.44	.81	2.66	.73	2.17	.62	2.21	.89
11. Greece	34	2.58	.97	3.08	.94	2.38	.69	2.51	1.04
12. India	22	2.22	.75	2.48	.77	2.10	.60	2.12	.86
13. Ireland	23	2.59	.78	3.20	.86	2.15	.52	2.40	.86

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Table 3 continued

Country	N	Job Satisfaction		Stress		Satisfaction with Teamwork		Empowerment	
		$\overline{X}$	SD	$\overline{X}$	SD	$\overline{X}$	SD	$\overline{X}$	SD
14. Japan	486	2.84	.83	3.27	.77	2.52	.69	2.60	.93
15. Mexico	5,577	2.27	.80	2.46	.79	2.15	.69	2.25	.89
16. Netherlands	101	2.32	.77	2.66	.72	2.25	.71	2.25	.67
17. New Zealand	113	2.75	.94	2.96	.81	2.40	.65	2.45	.88
18. Norway	49	2.53	.83	2.92	.82	2.36	.68	2.18	.77
19. Portugal	287	2.69	.89	2.82	.82	2.54	.68	2.31	.88
20. South Africa	26	2.22	.80	2.37	.64	2.37	.53	2.41	.90
21. Spain	831	2.63	.87	2.87	.83	2.34	.73	2.12	.98
22. Sweden	61	2.55	1.10	2.80	.83	2.25	.67	2.18	.95
23. Switzerland	64	1.99	.69	2.39	.73	1.93	.62	2.19	.86
24. Taiwan	538	2.28	.72	2.51	.77	1.97	.59	2.12	.75
25. Thailand	695	2.14	.71	2.58	.71	2.15	.63	2.36	.90
26. UK	5,772	2.63	.89	3.02	.80	2.31	.64	2.27	.81
27. USA	33,984	2.44	.96	2.79	.93	2.14	.70	2.06	.92

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Table 3 continued

Country	N	Job Satisfaction		Stress		Satisfaction with Teamwork		Empowerment	
		$\overline{X}$	SD	$\overline{X}$	SD	$\overline{X}$	SD	$\overline{X}$	SD
28. Venezuela	349	2.20	.84	2.77	.92	2.02	.65	2.00	.89

Note. Results for Job Satisfaction, Stress, Satisfaction with Teamwork, and Empowerment are based on responses on 5-point scales (answer options: 1 – 5). Please note that in this data, 1 = Strongly Disagree while 5 = Strongly Agree.

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Table 4

Means and Standard Deviations of Study Variables by Country for 1999 Data

Country	N	Job Satisfaction		Stress		Satisfaction with Teamwork		Empowerment	
		$\overline{X}$	SD	$\overline{X}$	SD	$\overline{X}$	SD	$\overline{X}$	SD
1. Argentina	647	2.62	.88	3.05	.84	2.28	.69	2.22	.95
2. Australia	1151	2.58	.95	3.00	.86	2.22	.64	2.26	.89
3. Austria	57	1.98	.58	2.93	.67	1.97	.57	1.94	.74
4. Belgium	557	2.37	.80	2.74	.73	2.18	.64	2.21	.80
5. Brazil	1,963	2.53	.94	3.19	.91	2.41	.71	2.16	.91
6. Canada	2,338	2.42	.98	2.84	1.04	2.09	.72	2.06	.93
7. Denmark	69	2.18	.74	2.89	.74	2.38	.55	2.29	.83
8. Finland	49	2.05	.69	2.83	1.00	1.96	.59	1.85	.63
9. France	725	2.29	.74	2.65	.78	2.11	.61	2.04	.81
10. Germany	4,830	2.44	.85	2.66	.76	2.15	.64	2.13	.88
11. Greece	35	2.62	1.08	3.20	.98	2.42	.76	2.54	1.27
12. India	347	2.42	.83	2.61	.79	2.13	.64	2.34	.98
13. Ireland	80	2.80	.95	3.04	.84	2.51	.83	2.48	.95

Table 4 continued

Country	N	Job Satisfaction		Stress		Satisfaction with Teamwork		Empowerment	
		X̄	SD	X̄	SD	X̄	SD	X̄	SD
14. Japan	362	2.24	.81	2.59	.89	2.07	.67	2.08	.86
15. Mexico	2,101	2.26	.80	2.57	.75	2.21	.67	2.05	.78
16. Netherlands	79	2.41	.75	2.92	.75	2.55	.77	2.34	.76
17. New Zealand	110	2.73	.91	2.82	.81	2.52	.73	2.29	1.03
18. Norway	55	2.41	.83	2.86	.76	2.29	.59	2.15	.82
19. Portugal	239	2.38	.80	2.93	.84	2.24	.67	2.07	.86
20. South Africa	28	2.15	.91	2.39	.62	2.03	.50	2.27	.81
21. Spain	850	2.55	.86	2.77	.83	2.21	.70	2.32	.95
22. Sweden	44	2.00	.70	2.60	.77	1.97	.58	2.22	.85
23. Switzerland	74	2.00	.70	2.60	.77	1.97	.58	2.23	.85
24. Taiwan	514	2.55	1.00	2.88	.97	2.16	.72	2.06	.93
25. Thailand	1,350	2.26	.73	2.42	.80	1.93	.60	2.11	.81
26. UK	7,017	2.63	.89	3.05	.83	2.31	.64	2.26	.84

Table 4 continued

Country	N	Job Satisfaction		Stress		Satisfaction with Teamwork		Empowerment	
		$\overline{X}$	SD	$\overline{X}$	SD	$\overline{X}$	SD	$\overline{X}$	SD
27. USA	32,912	2.55	1.00	2.87	.97	2.16	.72	2.06	.93
28. Venezuela	341	2.21	.83	2.68	.90	2.00	.63	1.91	.86

Note. Results for Job Satisfaction, Stress, Satisfaction with Teamwork, and Empowerment are based on responses on 5-point scales (answer options: 1 – 5). Please note that in this data, 1 = Strongly Disagree while 5 = Strongly Agree.

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Table 5

<u>Means, Standard Deviations, and Intercorrelations of Study Variables for 1996 Data</u>

Variable	Mean	SD	1	2	3	4
1. Job Satisfaction	2.57	.89	(.84)			
2. Stress	2.80	.67	-.48*	(.45)		
3. Satisfaction with Teamwork	2.21	.69	.61*	-.36*	(.78)	
4. Empowerment	2.20	.91	.56*	-.31*	.54*	(.77)

Note. N = 52,560. *p < .05. Results for Job Satisfaction, Stress, Satisfaction with Teamwork, and Empowerment are based on responses on 5-point scales (answer options: 1 – 5). Please note that in this data, 1 = Strongly Disagree while 5 = Strongly Agree. Diagonals represent the reliability (alpha) of each scale.

Table 6

Means, Standard Deviations, and Intercorrelations of Study Variables for 1998 Data

Variable	Mean	SD	1	2	3	4
1. Job Satisfaction	2.44	.92	(.84)			
2. Stress	2.79	.89	-.58*	(.82)		
3. Satisfaction with Teamwork	2.18	.69	.63*	-.50*	(.72)	
4. Empowerment	2.14	.90	.59*	-.44*	.58*	(.79)

Note. N = 62,936. *p < .05. Results for Job Satisfaction, Stress, Satisfaction with Teamwork, and Empowerment are based on responses on 5-point scales (answer options: 1 – 5). Please note that in this data, 1 = Strongly Disagree while 5 = Strongly Agree. Diagonals represent the reliability (alpha) of each scale.

Table 7

Means, Standard Deviations, and Intercorrelations of Study Variables for 1999 Data

Variable	Mean	SD	1	2	3	4
1. Job Satisfaction	2.52	.95	(.85)			
2. Stress	2.86	.92	-.58*	(.82)		
3. Satisfaction with Teamwork	2.19	.70	.65*	-.52*	(.78)	
4. Empowerment	2.13	.92	.59*	-.45*	.60*	(.80)

Note. N = 62,021. *p < .05. Results for Job Satisfaction, Stress, Satisfaction with Teamwork, and Empowerment are based on responses on 5-point scales (answer options: 1 – 5). Please note that in this data, 1 = Strongly Disagree while 5 = Strongly Agree. Diagonals represent the reliability (alpha) of each scale.

survey items within a country (Hofmann, 1997). OLS techniques disregard this information and focus only on the between group variance. The second advantage offered by HLM is that it allows for the study of both individual level and group level variance in individual level outcome variables while maintaining the appropriate level of analysis for the predictor variables (i.e., group level country predictors and individual level attitude predictors) (Hofmann, 1997).

OLS techniques on the other hand would require one of two approaches to handling a multi-level model such as the one under investigation in this study. One option would be to disaggregate the country level data. This would be accomplished by assigning the mean country score on individualism/collectivism, power distance, or uncertainty avoidance for each nation, to each individual within each country, thereby creating individual level "country" scores for each person. However, by disaggregating the country level data to the individual level, the potential variance in the individual level outcome variables that may be explained by nationality becomes based on the number of employees rather than the number of countries. The effect of this is that standard errors may be affected due to the increased sample size and, as a result, the inferences made on the data may also be influenced (Bryk & Raudenbush, 1992; Tate & Wongbundit, 1983). The other option is to aggregate the individual level data to the country level by taking the mean of individuals' responses within each country, thereby creating mean country scores on all of the attitude variables. All of the data would then be analyzed at the country level. However, this approach fails to address individual level variance in the outcome variables and therefore treats everyone within a country as equals. Given that one would

expect a great deal of within country variance in responses to attitude measures due to individual differences, aggregation would not appear to be the most adequate approach for analyzing the organizational attitude data.

Taken as a whole, HLM appears to be a positive alternative to traditional regression techniques for analyzing and interpreting the data that are involved in the present study. While there are other modeling techniques available that are similar to HLM, HLM is considered to be the most appropriate technique currently available (Klein & Kozlowski, 2000).

In order to test the hypotheses that involve a level-2 (cultural dimension) moderator of the relationship between two level-1 (organizational attitude) variables, HLM simultaneously accomplishes two tasks. One of these tasks involves the computation of the relationship between the two level-1 variables in terms of intercept and slope within each country. The other task involves the computation of the relationship between a level-2 variable and the slopes calculated in the level-1 relationships for each country. HLM accomplishes this test for moderation using a series of regression models that build on each other and eventually result in a somewhat large multi-step regression equation. The four basic models are referred to as the null-model, the random coefficients regression-model, the intercepts-as-outcomes model, and the slopes-as-outcomes model. While only the final slopes-as-outcomes model is necessary for testing for the hypothesized interactions, the previous sub-component models provide useful information on issues pertaining to variance (e.g., percentage of within group versus between group, or amount of variance explained), and also allow for tests on direct

effect hypotheses. The sub-component models also supply the information necessary to determine if certain requirements deemed necessary before moving on towards a test for an interaction are actually met. Perhaps most importantly, a version of a sub-component model will be used to test the direct effect hypotheses (H1, H2, and H5). Descriptions of each of the sub-component models, the requirements they fulfill, and other specific information is included in the following section that reports the actual results of the hypothesis tests.

As stated earlier, in order to test the multi-level hypotheses suggested in this study, certain conditions must first be met. The first of these conditions states that there should be systematic between group variance. Given that each hypothesis suggests that an outcome variable (e.g., job satisfaction, stress, or satisfaction with teamwork) will be predicted differently for individuals from different countries, there must first be evidence that variance actually exists between countries that rate differently on the cultural dimension scales. HLM allows for a test of this condition in the null model.

As can be seen in Figure 2, the null model includes only a level-1 outcome variable and an intercept estimate in the level-1 regression equation (e.g., job satisfaction). The level-1 equation is the regression equation that in HLM that may include both level-1 outcome and predictor variables. Similar to the level-1 equation, there are no predictors entered into the level-2 equation. This is the equation that will eventually include a level-2 variable as a predictor of either the intercept or slope calculated between two level-1 variables. However, the lack of inclusion of level-2 predictors does not preclude the inclusion of the level-2 equation in this model as will be

explained shortly. Because there are no predictors in the level-1 equation, the variance in

the level-1 outcome variable is regressed onto a unit vector. Keeping in mind that the

level-1 equation calculates this regression intercept for each country, the regression onto a

unit vector results in an intercept that is equal to the mean value of the level-1 outcome

variable for each country. Furthermore, by regressing the level-1 outcome variable onto a

constant unit vector, any within-country variance associated with that variable is thus

forced into the residual term (r_{ij}). Following the level-1 regressions, the level-2 equation

takes the intercept term (e.g., the mean value of job satisfaction) for each country and

regresses that value onto another unit vector. This level-2 equation yields both a gamma

coefficient (γ_{00}) that is equal to the grand mean of job satisfaction across all countries, and

a residual term (U_{0j}) that contains the between country variance. To summarize, while

the null model provides the foundation from which progressive HLM models will be built

off of, the result of primary interest at this stage is that the variance in the outcome

variable is partitioned into both between and within country variance. This model also

provides for a significance test of the between country variance in the form of a chi-

square test.

The null model was run to test for satisfactory between group variance in the three

outcome variables addressed in this study: job satisfaction, stress, and satisfaction with

teamwork. The results for job satisfaction, stress, and satisfaction with teamwork suggest

that there is significant between group variance for each of these outcome variables and,

therefore, that the first condition is met. Table 8 summarizes the results of the HLM null

model analyses for the three outcome variables for 1996, 1998, and 1999. Providing both

Figure 2

An Example of the HLM Null Model

Level-1 Model:

Job Satisfaction $_{ij}$ = β_{0j} + r_{ij}

Level-2 Model:

β_{0j} = γ_{00} + U_{0j}

Where:

Job Satisfaction: example of level one outcome variable
β_{0j} = mean job satisfaction for group (country) j
γ_{00} = the grand mean of job satisfaction across all countries
r_{ij} = σ^2 = the within country variance in job satisfaction
U_{0j} = τ_{00} = the between country variance in job satisfaction

Table 8

Results of the Null Model: Testing for Between Nation Variance in Measures of Job Satisfaction, Stress, and Satisfaction with Teamwork

Variable	τ_{00}	χ^2	ICC
1. Job Satisfaction			
1996	.035	1239.73*	.050
1998	.037	871.24*	.040
1999	.034	1479.87*	.037
2. Stress			
1996	.020	1307.29*	.044
1998	.053	2110.80*	.060
1999	.039	1492.54*	.045
3. Satisfaction with Teamwork			
1996	.028	1093.06*	.058
1998	.023	1577.39*	.045
1999	.030	1204.94*	.058

Note. *$p < .05$. τ_{00} = the between country variance in job satisfaction, stress, and satisfaction with teamwork. χ^2 = chi-square test for existence of significant between country variance. ICC = intraclass correlation which represents the proportion of between country variance in the outcome variables.

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the between and within variance, the null model also supplies the necessary information required to calculate intraclass correlations, or the proportion of between group variance in the outcome variables. The ICC values for job satisfaction, stress, and satisfaction with teamwork for the years 1996, 1998, and 1999 are located in Table 8. The ICC values, ranging from 3.7% to 6%, may be interpreted as the amount of variance in the outcome variables that may be explained by country level data. The purpose of this study then, is to determine if country rankings on the cultural dimensions of individualism/collectivism, power distance, and uncertainty avoidance explain a significant portion of the variance that may be explained by country level differences. The small amount of country-level variance is not unexpected. The individual and organizational variety within countries (e.g., language, class, education, geographic location, organizational size, supervision style, etc.), combined with the individuality of human beings, is likely to result in very large amounts of within country variance. It is also true that all subjects are part of the same company. This company may have a pervasive culture that acts to limit country level culture effects between nations. So, while this study contends that individuals within a culture do to an extent share common values and environments, it would be improper to assume that national membership would explain large amounts of variance over and above individual differences.

Mean Difference Hypotheses

Given that the condition stipulating that there must be between culture variance in the level-1 outcome variables was met, Hypotheses 1, 2, and 5 may now be tested. Those hypotheses suggested that individuals who are from countries that differ on the cultural

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dimension scales would report higher or lower levels of stress or satisfaction with working in teams. The further conditions that will be discussed shortly, and that must be met in order to test more complicated hypotheses, do not apply to H1, H2, or H5. These hypotheses need only for there to be systematic variance in specific level-1 outcome variables that may be explained by culture. These hypotheses suggest a model to test for direct level-2 predictor effects on level-1 outcome variables (without the usual level-1 predictor also in the equation). In order to test these hypotheses, a somewhat unique HLM model was created that included only the level-1 outcome variable in the level-1 equation, and a level-2 variable in the level-2 equation as a predictor of the level-1 intercept (see Figure 3). By setting up the model this way, the resulting analysis reveals whether or not variance in individuals' reported satisfaction with teamwork (H2 and H5) or stress (H1) is explained by culture in terms of national ratings on the cultural dimension scales.

Hypothesis 1 suggested that individuals from cultures high on collectivism would report less perceived stress than individuals from cultures high on individualism. Table 9 summarizes the findings associated with testing this hypothesis. The Gamma Coefficients in the table represent the relationship between individualism/collectivism and stress. The t-test for this coefficient provides a significance test for the stated hypothesis that in this case yielded non-significant findings for data collected in 1996, 1998, and 1999. While the satisfying of the first condition (based on the results of the null model test) means that there are in fact differences in reported stress between countries, this finding suggests that an individuals' belonging to a culture that ranks

Figure 3

An example of the HLM model that was developed to test the mean difference
hypotheses

Level-1 Model:

Job Satisfaction $_{ij} = \beta_{0j} + r_{ij}$

Level-2 Model:

$\beta_{0j} = \gamma_{00} + \gamma_{01}$ (Power Distance) + U_{0j}

Where:

Job Satisfaction: example of level-1 outcome variable
Power Distance: example of level-2 predictor variable
β_{0j} = mean job satisfaction for group (country) j
γ_{00} = the level-2 intercept
γ_{01} = the level-2 slope
$r_{ij} = \sigma^2$ = the within country variance in job satisfaction
$U_{0j} = \tau_{00}$ = the residual intercept variance

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higher or lower on individualism/collectivism does not significantly predict those differences.

Hypothesis 2 predicted that individuals from cultures high on collectivism would report higher levels of satisfaction with teamwork than individuals from cultures high on individualism. This hypothesis was also not supported for any of the years that data was collected (see Table 9 for a summary of results). Differences in reported satisfaction with teamwork between countries could not be explained by the country rankings on individualism/collectivism.

Hypothesis 5 suggested that individuals from cultures high on uncertainty avoidance would report less satisfaction with teamwork than individuals from cultures that are low on uncertainty avoidance. Once again, cultural differences as defined by Hofstede's dimensions failed to predict differences in reported satisfaction with teamwork in all three data sets (1996, 1998, and 1999) (see Table 9 for a summary of results).

Moderation Hypotheses

The nine remaining hypotheses test for the moderating effects of culture on the relationships between organizational attitude variables (i.e., satisfaction with teamwork, empowerment, stress, and job satisfaction). Once again, in each of these hypotheses, the organizational attitude variables represent individual level data (level-1) while culture is represented by country level (level-2) rankings on power distance, uncertainty avoidance, and individualism/collectivism. However, in order to test for potential moderation effects of the level-2 variables on the relationships between the level-1 variables, two more

Table 9

Results of Testing Hypotheses 1, 2, and 5 for 1996, 1998, and 1999 data

Hypotheses	Gamma Coefficients (γ_{01})	Standard error	T-ratio	p-value
1. H1 (collectivism related to less perceived stress)				
1996	.0003	.0014	.227	.822
1998	.0018	.0020	.167	.869
1999	.0012	.0017	.602	.552
2. H2 (collectivism related to higher satisfaction with teamwork)				
1996	.0003	.0016	.888	.383
1998	.0007	.0013	.536	.593
1999	.0002	.0015	.602	.514

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Table 9 continued

Hypothesis	Gamma Coefficients (γ_{01})	Standard error	T-ratio	p-value
3. <u>H5</u> (uncertainty avoidance related to less satisfaction with teamwork)				
1996	.0010	.0020	.714	.481
1998	.0009	.0014	.140	.891
1999	.0004	.0016	.246	.807

Note. *p < .05. γ_{01} = the level two slope coefficient or the relationship between the level-2 variable and the level-1 outcome variable. T-ratio = test to determine if the relationship is significant.

Figure 4

An example of the HLM Random Coefficient Regression Model

Level-1 Model:

Job Satisfaction $_{ij}$ = β_{0j} + β_{1j} (Empowerment $_{ij}$) + r_{ij}

Level-2 Model:

$\beta_{0j} = \gamma_{00} + U_{0j}$
$\beta_{1j} = \gamma_{10} + U_{1j}$

Where:

Job Satisfaction: examaple of level-1 outcome variable
Empowerment: example of level-1 predictor of job satisfaction
γ_{00} = the mean of the intercepts across countries
γ_{10} = the mean of the slopes across countries
$r_{ij} = \sigma^2$ = the level-1 residual variance
$U_{0j} = \tau_{00}$ = the variance in intercepts
$U_{1j} = \tau_{11}$ = the variance in slopes

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conditions must first be met.

To begin with, in order for a level-2 variable to moderate the relationship between two level-1 variables, there must first be a relationship between the two level-1 variables. The random coefficients regression model provides a test of this condition. This model builds on the null model by including both a level-1 outcome variable (e.g., job satisfaction) and a level-1 predictor variable (e.g., empowerment) in the level-1 equation while still leaving out any specific level-2 predictors in the level-2 equation (see Figure 4). In the random coefficient model, the level-1 equation simply regresses the level-1 outcome variable on the level-1 predictor and intercept. Then, as there are no level-2 predictors included in the level-2 equation, this model regresses the intercepts and slopes created in the level-1 equation on an intercept term and a residual (similar to the null model). The resulting gamma coefficients represent the mean of intercepts across countries (γ_{00}) and the mean of slopes across countries (γ_{10}). Of primary interest for the satisfaction of the second condition is the t-test of the γ_{10} coefficient which tests whether, on average, the slope, or relationship, between the level-1 predictor and level-1 outcome differs significantly from zero.

The random coefficient model was used to test the four level-1 relationships that are suggested in the hypotheses. The level-1 relationships that were tested included satisfaction-with-teamwork with job satisfaction, satisfaction-with-teamwork with stress, empowerment with job satisfaction, and empowerment with stress. Results of the t-tests on the γ_{10} are located in the first two columns of Table 10. All four level-1 relationships were found to differ significantly from zero in all three years that data was collected.

This model also provides R^2 values that represent the percentage of variance in the level-1 outcome variable that is accounted for by the level-1 predictor. The resulting R^2 values for data in 1996, 1998, and 1999 are contained in Table 10 and range from 9.7% to 42.8% with a mean of 28.1%. Combined, these results provide evidence that the suggested level-1 relationships do exist, and therefore satisfy the second necessary condition for testing the actual moderation hypotheses.

The random coefficients regression model also provides a test for the third and final necessary condition. In order to test hypotheses that suggest that a level-2 variable moderates the relationship between two level-1 variables, there must also be evidence that the slopes generated by the regression of the level-1 outcome variable on the level-1 predictor differ between groups. Without such evidence, there would be no reason to expect that being from different countries would differentially influence the relationships between the level-1 variables. The random coefficient model in HLM tests for this condition using a chi-square test for the residual variance component of the level-2 equation (τ_{11}). Much like in the null model, this residual component in the level-2 equation contains the between-country variance, this time the variance in slopes. Therefore, a significant chi-square test is evidence of significant variance in slopes between countries.

Results of these analyses showed that for the level-1 relationships involving satisfaction-with-teamwork with job satisfaction, empowerment with job, satisfaction-with-teamwork with stress, and empowerment with stress, the regression slopes did vary significantly between groups. Thus, the final condition for testing the suggested

Table 10

Results of the Random Coefficient Regression Model

Relationships	Gamma Coefficients (γ_{10})	Standard Error	Variance in Intercepts (τ_{00})	χ^2	Variance in Slopes (τ_{11})	χ^2	R^2
1. Satisfaction with Teamwork with Job Satisfaction							
1996	.72*	.02	.045	2237.22*	.007	412.21*	.365
1998	.77*	.02	.040	1459.18*	.007	646.99*	.401
1999	.80*	.02	.039	2743.07*	.005	623.46*	.428
2. Satisfaction with Teamwork with Stress							
1996	.32*	.02	.021	1505.90*	.003	198.76*	.123
1998	.58*	.02	.055	2836.86*	.010	682.93*	.255
1999	.59*	.03	.040	2037.87*	.012	898.26*	.275
3. Empowerment with Job Satisfaction							
1996	.52*	.02	.043	2021.53*	.004	277.43*	.321
1998	.56*	.02	.040	1343.58*	.005	406.12*	.348
1999	.57*	.01	.038	2411.42*	.003	374.39*	.355

Table 10 continued

Relationships	Gamma Coefficients (γ_{10})	Standard Error	Variance in Intercepts (τ_{00})	χ^2	Variance in Slopes (τ_{11})	χ^2	R^2
4. Empowerment with Stress							
1996	.21*	.02	.021	1459.77*	.0034	334.08*	.097
1998	.38*	.02	.055	2637.56*	.0048	637.25*	.200
1999	.38*	.02	.040	1875.05*	.0060	753.77*	.208

Note. *p < .05. df = 27. γ_{10} = the mean of the slopes across countries. χ^2 = chi-square test for either the significance of the variance in intercepts or slopes. R^2 = percentage of varince in the level-1 outcome variable that is accounted for by the level-1 predictor variable.

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Figure 5

An example of the HLM Slopes-as-Outcomes Model

Level-1 Model:

Job Satisfaction $_{ij}$ = β_{0j} + β_{1j} (Empowerment $_{ij}$) + r_{ij}

Level-2 Model:

β_{0j} = γ_{00} + γ_{01} (Power Distance $_j$) + U_{0j}
β_{1j} = γ_{10} + γ_{11} (Power Distance $_j$) + U_{1j} .

Where:

Job Satisfaction: example of level-1 outcome variable
Empowerment: example of level-1 predictor
Power Distance (in β_{0j} equation): example of level-2 predictor of level-1 intercept
Power Distance (in β_{1j} equation): example of level-2 predictor of level-1 slopes
γ_{00} = the level-2 intercept
γ_{01} = the level-2 slope
γ_{10} = the level-2 intercept
γ_{11} = the level-2 slope (actual test of moderation hypothesis)
r_{ij} = σ^2 = the level-1 residual variance
U_{0j} = τ_{00} = the residual intercept variance
U_{1j} = τ_{11} = the residual slope variance

moderation hypotheses has been satisfied. Results of these analyses are summarized in the right-most portion of Table 10 (chi-square tests for variance in intercepts between countries (τ_{11}) are also included in the table for reference).

The moderation hypotheses were tested using a slopes-as-outcomes model. This model maintains the characteristics of the previous model (i.e., one level-1 predictor and one level-1 outcome variable) but adds a level-2 predictor into the equation (see Figure 5). The term "slopes-as-outcomes" is used to name this model because the level-2 variables, in this case either power distance, uncertainty avoidance, or individualism/collectivism, are brought into the equation as predictors of the level-1 regression slopes. It should be noted that the level-2 variables in this model are also included as predictors of the level-1 regression intercepts. Intercepts-as-outcomes is a separate model used to test for differences in intercepts depending on group membership (see Figure 6). While that particular question is not of direct interest for answering any of the current hypotheses, the characteristics of the intercepts-as-outcomes model are maintained in the slopes-as-outcomes model as it is necessary to partial out the main effects of culture before testing for moderation effects in the slopes-as-outcomes model. As may be seen in Figure 5, the slopes as outcomes model takes the level-1 relationship slope coefficients and regresses them in an equation that includes a level-2 variable (e.g., power distance). In this way, the model tests for the existence of a moderating relationship between the level-2 variable and the slope of the level-1 relationship. In terms of this study, a significant t-test of the gamma coefficient (γ_{11}) in the level-2 slope equation is an indication that the relationship between the organizational attitude

variables (level-1) is moderated by culture (level-2). Associated R^2 values represent the amount of variance in the level-1 slopes across countries that is explained by the level-2 predictor. The slopes as outcomes model also provides a chi-square test on the residual variance in slopes between countries in order to determine if significant amounts of this variance remain to be explained by other unidentified level-2 predictors. This will be discussed further after a summary of the results of the hypothesis tests.

Hypothesis 3 stated that the relationship between satisfaction with teamwork and job satisfaction would be stronger and more positive for individuals from cultures that are high on collectivism. Results of this analysis may be found in first column of Table 11. Analysis of this hypothesis resulted in non-significant results for all three years that that data was collected. These findings suggest that the relationship between the level-1 variables that were reported by the individual respondents are not moderated by the individualism/collectivism scores for the countries that they are from.

Hypothesis 4 proposed that the relationship between satisfaction with teamwork and stress would be stronger and more negative for cultures that are high on collectivism. This hypothesis was also not supported by the data for 1996, 1998, or 1999 (see Table 11). Once again, there is lack of evidence to support a moderation of the level-1 relationship.

Hypothesis 6 suggested that the relationship between satisfaction with teamwork and job satisfaction would be stronger for individuals from cultures that are high on uncertainty avoidance than for individuals from cultures that are low on uncertainty avoidance. This hypothesis was not supported by the data in 1996, 1998, or 1999 (see

Figure 6

An example of the HLM Intercepts-as-Outcomes Model

Level-1 Model:

Job Satisfaction $_{ij}$ = β_{0j} + β_{1j} (Empowerment $_{ij}$) + r_{ij}

Level-2 Model:

β_{0j} = γ_{00} + γ_{01} (Power Distance) + U_{0j}
β_{1j} = γ_{10} + U_{1j}

Where:

Job Satisfaction: example of level-1 outcome variable
Empowerment: example of level-1 predictor
Power Distance (in β_{0j} equation): example of level-2 predictor of level-1 intercepts
γ_{00} = the level-2 intercept
γ_{01} = the level-2 slope
γ_{10} = the mean of the slopes across countries
r_{ij} = σ^2 = the level-1 residual variance
U_{0j} = τ_{00} = the residual intercept variance
U_{1j} = τ_{11} = the variance in the slopes

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Table 11

Results of the Slopes as Outcomes Model for Moderation Hypotheses

Hypotheses	Gamma Coefficients (γ_{11})	Standard Error	R^2	Residual Slope Variance	χ^2
1. H3 (satisfaction with teamwork related to job satisfaction, moderated by Ind./Coll.)					
1996	-.0004	.0010	.137	.0087	507.81*
1998	.0011	.0008	.169	.0056	355.73*
1999	.0005	.0007	.037	.0052	483.97*
2. H4 (satisfaction with teamwork related to stress, moderated by Ind./Coll.)					
1996	-.0006	.0007	.03	.0034	257.68*
1998	-.0010	.0010	.044	.0109	908.17*
1999	-.0017	.0010	.14	.0117	1415.72*

Table 11 continued

Hypotheses	Gamma Coefficients (γ_{11})	Standard Error	R^2	Residual Slope Variance	χ^2
3. H6 (satisfaction with teamwork related to job satisfaction, moderated by uncertainty avoidance)					
1996	-.0005	.0010	.004	.0072	333.75*
1998	-.0010	.0009	.064	.0063	467.64*
1999	-.0012	.0008	.213	.0043	410.22*
4. H7 (satisfaction with teamwork related to stress, moderated by uncertainty avoidance)					
1996	.00003	.0008	.073	.0036	199.92*
1998	.0007	.0012	.056	.0110	762.23*
1999	.0011	.0013	.12	.014	1092.38*

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Table 11 continued

Hypotheses	Gamma Coefficients (γ_{11})	Standard Error	R^2	Residual Slope Variance	χ^2
5. H8 (empowerment related to job satisfaction, moderated by power distance)					
1996	.0009	.0010	.123	.0041	365.05*
1998	-.0006	.0009	.044	.0045	337.34*
1999	-.0002	.0008	.016	.0033	343.20*
6. H9 (empowerment related to stress, moderated by power distance)					
1996	.0013	.0009	.017	.0034	390.90*
1998	.0017*	.0010	.006	.0049	793.66*
1999	.0016*	.0010	.037	.006	943.70*

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Table 11 continued

Hypotheses	Gamma Coefficients (γ_{11})	Standard Error	R^2	Residual Slope Variance	χ^2
7. <u>H10</u> (empowerment related to job satisfaction, moderated by Ind./Coll.)					
1996	-.0002	.0007	.11	.0041	327.10*
1998	.0012*	.0006	.285	.0033	137.63*
1999	.0007	.0006	.152	.0029	208.03*
8. <u>H11</u> (empowerment related to job satisfaction, moderated by uncertainty avoidance)					
1996	-.0005	.0008	.08	.0036	213.17*
1998	.00007	.0008	.059	.0048	415.18*
1999	-.00004	.0007	.053	.0034	364.88*

Table 11 continued

Hypotheses	Gamma Coefficients (γ_{11})	Standard Error	R^2	Residual Slope Variance	χ^2
9. <u>H12</u> (empowerment related to stress, moderated by uncertainty avoidance)					
1996	-.00003	.0007	.066	.0037	330.49*
1998	.0010	.0010	.062	.0050	733.35*
1999	.0005	.0009	.075	.0063	871.33*
10. <u>H-exploratory</u> (job satisfaction related to stress, moderated by individualism/collectivism)					
1996	-.0014*	.0007	.145	.0036	80.86*
1998	-.0017*	.0008	.124	.0078	1196.76*
1999	-.0018*	.0008	.280	.0065	1453.67*

Note. *p < .05. df = 26. γ_{11} = level two slope coefficient, significant gamma coefficients are evidence that the level-2 variable moderated the relationship between the two level-1 variables. R^2 = amount of variance in the level-1 slopes across countries that is explained by the level-2 predictor. χ^2 = chi-square test to determine if the residual slope variance is significant.

Table 11 for a summary of results).

Hypothesis 7, that the relationship between satisfaction with teamwork and stress will be more strong and negative for individuals from cultures high on uncertainty avoidance was also unsupported by the data for any of the three years (see Table 11 for a summary of results).

Hypothesis 8, that the relationship between empowerment and job satisfaction will be more positive for individuals from cultures that are low on power distance than for individuals from cultures that are high on power distance was not supported by the data (see Table 11 for a summary of results).

Hypothesis 9, that the relationship between empowerment and stress will be higher and more positive for individuals from cultures that are high on power distance was marginally supported in both the 1998 data (γ_{11} = .0017, se = .001, t = 1.718, p = .097) and the 1999 data (γ_{11} = .0016, se = .001, t = 1.517, p = .141). A summary of the results may be found in Table 11. Plotting the marginally supported interactions for both years (see Figure 7 for the plot of the interaction found in the 1998 and 1999 data) reveals that empowerment and stress are actually more negatively related for individuals from cultures that are accustomed to unequal power distributions. A test of the R^2 value for this result shows that power distance accounts for .6% and 3.7% of the variance in empowerment-stress slope across groups for 1996 and 1998 respectively.

Hypothesis 10, that the relationship between empowerment and satisfaction would be more positive for individuals from cultures that are high on individualism was supported by the 1998 data (γ_{11} = .0012, se = .001, t = 2.09, p = .046) but not by the 1996

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or 1999 data (see Table 11 for a summary of results). Plotting this result shows that individuals from individualistic cultures do indeed show a more positive relationship between empowerment and satisfaction (see Figure 8). A test of the R^2 value for this result shows that individualism/collectivism accounts for 28.5% of the variance in the empowerment-satisfaction slope across groups.

Hypothesis 11 suggested that the relationship between empowerment and job satisfaction would be lower for individuals from cultures that are high on uncertainty avoidance than for those low on uncertainty avoidance. The hypothesis was not supported by the data from any of the three years (see Table 11 for a summary of results).

Hypothesis 12, that the relationship between empowerment and stress would be stronger and more positive for individuals from cultures that are high on uncertainty avoidance was also not supported by any of the data (see Table 11 for a summary of results).

It was mentioned earlier that the slopes-as-outcomes model also provides a chi-square test to determine if the residual slope variance across countries is significant. As can be seen in Table 11, the residual slope variance parameter (U_1) was significant for every hypothesis for every year. These findings suggest that there remain other country level variables, not considered by this study, which may account for unique variance in the slopes of the level-1 relationships across groups. For example, country level variables including religion, language, socio-economic status, geography, weather climate, and political systems may all potentially account for some part of the variance in slopes that does exist between countries.

Figure 7

Representative Plot of the marginally significant interaction found for Hypothesis 9 in both the 1998 and 1999 data sets
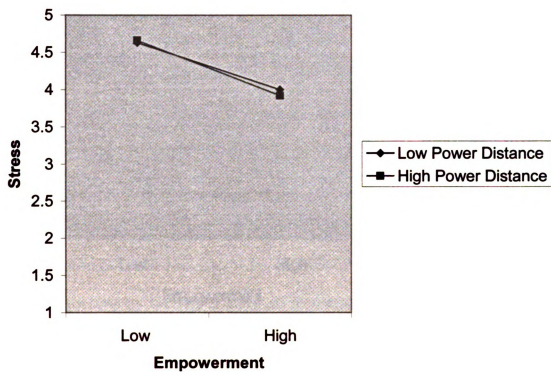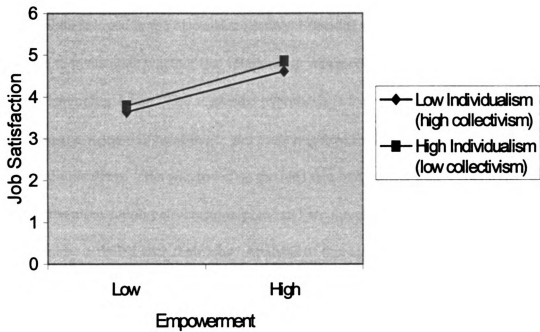
Figure 8

Plot of the significant interaction found for Hypothesis 10 in the 1998 data set

<u>Exploratory Results</u>

After looking over the data it was determined that there was a relationship between job satisfaction and stress. After reviewing the literature on this relationship (which will be covered in the discussion section) I decided to test an exploratory hypothesis to investigate whether that relationship was moderated by individualism/collectivism. The suggested hypothesis is that the relationship between job satisfaction and stress will be stronger and more negative for individuals from cultures high on individualism. This was based on the idea that individuals from collectivist cultures have more support structures in place and are therefore less likely to report stress, even when less satisfied with their jobs. Analysis of this hypothesis resulted in significant findings for 1996 data (γ_{11} = .001, se = .001, t = -2.184, p = .038), 1998 data (γ_{11} = .002 se = .001, t = -2.145, p = .041), and the 1999 data (γ_{11} = .002, se = .001, t = -2.375, p = .025). A summary of results may be found in Table 11. Plotting the interactions for those three years reveals that the relationship between job satisfaction and stress is stronger and more negative for individuals from cultures that are high on individualism (see Figure 9 for a plot that represents the interaction found for all three years). A test of the R^2 values for these results show that power distance accounts for 14.5%, 12.4%, and 28% of the variance in the job satisfaction-stress slope across groups for 1996, 1998, and 1999 respectively.

Discussion

The purpose of this study was to examine a model that proposed that the relationships between certain organizational attitude variables (e.g., satisfaction with

Figure 9

Plot of the significant interactions found for the exploratory Hypothesis for the years 1996, 1998, and 1999

teamwork, empowerment, job satisfaction, and stress) were moderated by dimensions of culture. Three of Hofstede's well known dimensions of national culture (e.g., individualism, power distance, and uncertainty avoidance) were employed as delimiters of culture, as they proved to be one of the more well grounded attempts at defining differences between cultures. Questionnaire responses from salaried employees of a global manufacturing organization provided data from 28 countries that had also been included in the Hofstede studies.

The results of this study provided only minimal support for the suggested model. Specifically, there was no evidence of support for the direct effect hypotheses and only minimal support (specifically for H9 and H10) for the hypotheses that proposed culture as a moderator of the relationships between organizational attitude variables. Overall, the results point towards a less broad application of cultural variables and their influence on organizational attitudes than was suggested by the model.

Supported Hypotheses

Hypothesis 9 suggested that the relationship between empowerment and stress would be higher and more positive for individuals from cultures that are high on power distance. Analysis of the data revealed marginally significant results for the 1998 and 1999 data sets hinting that power distance did moderate this relationship. However, contrary to the stated hypothesis, the relationship between empowerment and stress turned out to be negative. As mentioned earlier, there is some debate in the literature as to the relationship between empowerment and stress. While some suggest that increased responsibilities associated with empowerment lead to an increases in perceived stress

(Mishra & Spreitzer, 1998; Sutherland, Fogerty & Pithers, 1995), others purport that empowered workers, who have more choices and control in their work lives, experience lower levels of stress (Jackson, 1983; French & Caplan, 1972). Therefore, while the direction of the relationship was not suggested, it is not a surprising finding. Congruent with Hypothesis 9 is that fact that the relationship between empowerment and perceived stress was stronger for individuals from countries that are high on power distance.

In order to best understand the marginally significant findings, the interaction must be discussed. The first point of interest is that the individuals from high power distance nations, who operate at what they see as low levels of empowerment, report more perceived stress than individuals from low power distance nations who also report low levels of empowerment. This finding is in line with the thinking of Goffman (1961) who suggested that organizations in high power distance nations tend to have rigid role structures that compound role stresses. While both groups of individuals (high and low power distance) are experiencing low levels of empowerment, those individuals from countries high in power distance are more likely to operate in a system that includes unequal power distributions (Hofstede, 1980) and dysfunctional role structures (Goffman, 1961). These conditions, that are associated with high power distance nations, appear to create an environment where workloads and other work place stimuli are perceived as more stressful when compared with reports from individuals operating in low power distance environments. Perhaps despite low levels of reported empowerment, individuals from nations low in power distance have enough role autonomy and shared power built into their every day organizational life that "limited empowerment" carries a different

meaning for them. In other words, the low levels of empowerment reported by individuals from nations low in power distance may be qualitatively higher than the low levels of empowerment reported by individuals from countries high in power distance. In turn, individuals from low power distance nations may have freedoms built into their work roles that allow them to better deal with work place stressors, and hence report less perceived stress.

As levels of reported empowerment increase, individuals from both low and high power distance nations report less perceived stress. This finding, that empowered workers report less stress, supports the contentions of researchers such as Jackson (1983) and French and Caplan (1972). However, at one standard deviation above the mean for empowerment, individuals from countries that are high on power distance report levels of stress that are very similar to individuals from countries low on power distance. Therefore, it appears that autonomy, decision-making power, and other characteristics associated with empowerment have a more powerful influence on the reported stress levels of those individuals from countries where such freedoms in the workplace are not the norm.

Taken as a whole, these findings suggest that organizations that are concerned about the health of their employees and the costs associated with stress related problems should be aware of the worker's perceptions regarding levels of empowerment. This is especially true in high power distance cultures where individuals do not have the general work role freedoms that are more common in low power distance cultures. It appears that employees who perceive themselves as being empowered feel that they have been given

the necessary tools and freedoms to handle workloads and workplace stressors more effectively than those who are not empowered.

It should be noted that these marginally significant results were only found in the 1998 and 1999 data sets and could not be established in the earlier 1996 data set. While this presents some cause for concern regarding the reliability of these findings, the differences in the results may be due in part to the fact that the sample sizes significantly increased between the 1996 and 1998 data collection periods. Overall, the fact that the results were obtained across two years of data collection gives good reason to believe that the results are not due to chance.

The only other significant finding for the moderation hypotheses was in support of Hypothesis 10. This hypothesis suggested that the relationship between empowerment and job satisfaction would be more strong and positive for individuals from cultures that are high on individualism than for people from cultures that are high on collectivism (low on individualism). As predicted, the nature of this interaction is such that people from individualistic cultures displayed a stronger relationship between increased empowerment and increased job satisfaction than did individuals from collectivist cultures. This result is in line with the thinking of Earley and Gibson (1998) who suggested that people from individualistic cultures tend to enjoy autonomy, decision-making latitude, and employee-centered incentive systems, many of the same terms that are used to describe empowerment. This finding is also in support of previous research done by Near (1986) who found that freedom on the job was related to satisfaction for workers from individualistic cultures, but not for those from collectivist cultures.

As was the case with empowerment and perceived stress, it appears that levels of empowerment are importantly related to employee's formation of opinions regarding their job satisfaction. Also, much like the relationship of empowerment with perceived stress, increased levels of empowerment appear to be beneficial to employees across culture. This is evidenced by the fact that both individualists and collectivists show a strong positive relationship between empowerment and satisfaction. Therefore, if an organization is concerned with their employee's general job satisfaction, it would seem to be important to monitor how employees perceive the level of empowerment that they are experiencing. This is especially true for organizations operating in cultures such as the United States, Canada, Ireland, Australia, and the United Kingdom which are extremely high on individualism and where people place more emphasis on the individual freedoms, and reward opportunities that are offered by empowerment programs. This fact is emphasized by the finding that 28.5% of the variance in the empowerment-job satisfaction slopes across countries is accounted for by a nation's standing on the cultural dimension of individualism/collectivism.

While this finding does support Hypothesis 10, and explains a large amount of the variance in slopes across countries, it should be viewed with hesitation. The interaction that was found in the 1998 data could not be replicated in either the 1996 or the 1999 data sets. As has been mentioned, these data sets vary in size, and there is no way to know if the same people filled out the surveys each year, or if it is an entirely different sample. Nonetheless, the fact that this hypothesis was not even marginally supported in either of the other two data sets provides reason to believe that to some extent the finding is just a

chance occurrence within the 1998 data set.

Other Interesting Findings

Despite the lack of significant findings for both the direct effect and moderation hypotheses involving cultural dimensions, analysis of the data from all three years did provide some interesting information regarding differences and similarities between countries. First of all, it was found that there is variance between countries in the outcome variables. This finding shows that levels of satisfaction with teamwork (in the direct effect hypotheses), perceived stress, and job satisfaction vary by country in a meaningful way. Specifically, 3.7% to 6% of the variance in the outcome variables is attributable to country level differences. While perhaps not unexpected given the many differences between the countries that were included in this study, this finding nonetheless provides evidence that even at the country level, there do exist differences in attitudes about organizations.

A second finding of interest is that across countries, the hypothesized individual level relationships between organizational attitude variables did exist and were significant. Specifically, the relationship between satisfaction with teamwork and job satisfaction, as well as the relationship between empowerment and job satisfaction were found to be positive and significant. Also as predicted, the relationship between satisfaction with teamwork and stress was found to be negative and significant such that higher levels of satisfaction with teamwork were related to lower levels of perceived stress. Finally, empowerment was related to stress but in the opposite direction from what was hypothesized. However, this negative relationship was not completely

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surprising given the earlier discussion on empowerment and stress. In fact, these finding proved further support for the relationships between these variables as have been suggested in some of the literature (i.e., the relationship between working in teams and job satisfaction (Hackman, 1987; Sundstrom, De Meuse, & Futrell, 1990), working in teams and stress (Bass, 1982), empowerment and job satisfaction (Kirkman & Rosen 1999; Koberg et al., 1999, Locke, Schweiger, & Latham, 1984), and empowerment with stress (Jackson, 1983; French & Caplan, 1972)).

A third finding was that the slopes of the relationships that were just described were found to vary significantly between countries. This finding provides evidence that the strength of the relationships between the organizational attitude variables do indeed differ between countries. This finding alone is evidence that there may be some unique quality to certain countries that cause the relationships between the attitude variables to be either more or less strong. Given this finding, an argument can be made for the usefulness of cultural dimensions. As there is evidence that as of yet unexplained systematic between nation variance exists in the slopes of the individual level relationships, there is reason to search for common factors, cultural dimensions among them, that may explain that variance. While this particular study was mostly unsuccessful in that endeavor (and these lack of findings will be discussed later), the evidence that between country variance in slopes does exist is a small victory that should not be overlooked.

A fourth finding was that no support was found for Hypothesis 8, that the relationship between empowerment and satisfaction would be higher and more positive

for individuals from cultures low on power distance. These lack of results fail to provide evidence in support of the findings of Robert et. al (2000) which was one of the only studies to directly test a hypothesis involving culture as a moderator of the relationship between two organizational attitude variables. However, unlike in the study by Robert et. al (2000), this study actually included power distance scores in the analysis and therefore may provide better insight into the actual lack of cultural (in terms of power distance) moderation between empowerment and satisfaction.

Discussion of Exploratory Findings

One interesting finding did result from the exploratory analyses. After examining the literature, it was determined that it was worthwhile to investigate a relationship between the two variables that were primarily used as outcome variables in this study, job satisfaction and stress. While there is some support for a negative relationship between job satisfaction and stress (Bateman & Strasser, 1983; Cavanaugh, Boswell, Roehling, & Boudreau, 2000; Tetrick & LaRocco, 1987), there was no mention of an attempt to look for cultural moderators of this relationship in any of the literature that I reviewed.

The relationship between job satisfaction and stress was more strongly negative for individuals from cultures that are high on individualism than for individuals from cultures that are high on collectivism. This finding is similar to that of Bhagat, et al.(1994) who found that individuals from cultures high on collectivisim tended to show less of a relationship between stressors (e.g., job dissatisfaction) and perceived strain (e.g., perceived stress). This finding may be explained by the contention that people in collectivist cultures tend to display more social cohesion, social support, and less

insecurity than people in individualistic cultures (Triandis, et al., 1988). It is likely the supportive in-group structure of a collectivist culture that provides a coping mechanism for dealing with potential stressors that is lacking for a higher percentage of individuals in an individualistic culture. Of special importance in the case of this finding is that the moderation effect of individualism/collectivism existed for all three years of data collection.

Researchers such as Jones (1984), Jackson (1983), Coquhoren (1976), Cooper & Roden (1985), Weiss & Cropanzano (1986) and Lazarus (1991) among others have shown that stress and its associated health outcomes in employees have not only a monetary cost for organizations (e.g., absenteeism, turnover, health care, etc.), but also performance decrements (e.g., accidents, counterproductive behaviors, and sometimes decreased job satisfaction). Therefore, it would seem to behoove organizations that are worried about the aforementioned issues to also be concerned about the amount of stress that employees are experiencing. Given the relationship between satisfaction and stress that is suggested in the literature discussed above, and which is supported by the data in this study, one potential way to help reduce the likelihood of perceived stress affecting individuals in the workplace may be to either ensure that employees are satisfied. As it is often difficult to "ensure" that employees are satisfied with work, a more informed conclusion to take from this finding is that all organizations should learn from collectivist culture techniques for coping with potential stress. If organizations in individualistic cultures could find a way to include group support, foster the in-group cohesion amongst working teams, and build social support mechanisms, employees may learn to cope with

potential stressors such as job dissatisfaction before they become perceived as adding to experienced levels of stress.

Non-supported Hypotheses / Limitations

Also important, albeit more frustrating, was the lack of support for both the direct effect and moderation hypotheses. The suggested direct effect relationships between Hofstede's cultural dimensions and the attitude variables (H1, H2, and H5) simply did not exist. Even when the cultural dimensions not specified in the hypotheses were tested for direct effects in exploratory analysis, no consistent findings emerged. While the satisficing of the HLM condition that there exists variance between countries in the attitude variables does offer some support for a cross-level relationship between the attitude variables and some country level variable, use of Hofstede's cultural dimension variables proved to be unable to explain that variance. A similar lack of findings was discovered in the majority of the moderation hypotheses that were under investigation (H3, H4, H5, H6, H7, H8, H11, and H12). It appears that there may be two primary reasons why there was lack of support for both the direct effect hypotheses and the moderation of the attitude variable relationships: the lack of variance and the nature of Hofstede's cultural dimensions.

During the analysis of the data, it was discovered that significant variance in the attitude variables and the slopes of the attitude variable relationships across countries did indeed exist. While this seemed promising at first, it should be remembered that this variance is based on differences between countries and not cultures. Keeping this in mind, one major factor that may have influenced the lack of findings was that across all

these hypotheses, across all three years of data collection, the amount of this variance was consistently very small (.006 on average). This meant that that there was limited variance that could be explained by any country level variable, not to mention a specific aspect of each country such as the national score on one of Hofstede's cultural dimensions. This finding provides evidence that opposes what seems to be a prevalent view in the applied psychology literature, that there are important differences between cultures with regard to employee attitudes. This may hold particularly true within a specific organization, especially if that organization has a strong internal culture and norms that serve to limit the influence of national culture. Numerous researchers have discussed the potential strength of the influence of the organization on an individual's values and attitudes (Badawy, 1980; Griffeth, Hom, DeNisi, & Kirchner, 1980; Hull, 1987; Ronen & Kraut, 1977; Redding, 1976). Findings of particular interest include those that have shown that founders of organizations and top management have long-term effects on organizational culture and that people within organizations tend to be somewhat homogeneous as a result of said culture (Schneider, Goldstein, & Smith, 1995). Ronen and Shenkar (1985) point out that this organizational cultural influence is too often overlooked in cross-cultural psychology. Indeed, when one considers that there were 28 different nations from various parts of the world that were included in this study, the fact that there is such limited variance in both the direct effects and slopes of the relationships between attitude variables is interesting, if not amazing. Given these findings, one way to look at this would be to infer that upper management within a given global organization need worry less about cultural differences with regard to the organizational attitude variables that

were under investigation in this study. Instead, their time would be better spent insuring that their own organizational culture is well developed, consistent, and throughout all branches of their organization. However, another potential inference may be that the nature of the questionnaire and the items for each scale resulted in a context where employees, regardless of country or culture, responded in certain socially desirable ways. Such actions by employees, while not testable in this case, may have masked potential variance in the attitudes held by employees from different cultures.

While it is true that the variance that could potentially be explained by country level variables was very small, it was nonetheless significant. Furthermore, despite the fact that the significance of the variance values were likely influence by the extremely large sample sizes, there remained cross-country variance to be explained which may have been of interest from an academic standpoint, even if not from an applied one. This point of view then begs the following question: why did culture fail to explain the variance that did exist between countries? The most likely scapegoat for the explanation of the non-results would be to turn to the inadequacy of Hofstede's cultural dimensions. Researchers such as Schwartz (1994) and Sondergaard (1994) have discussed possible shortcomings of Hofstede's dimensions including how exhaustive the dimensions are of the culture construct, the adequacy of the sample, the age of the study, and how generalizable the dimensions are from the results discovered in one organization. However, I am not prepared to declare that Hofstede's dimensions are an inadequate means of delineating culture. First of all, despite potential limitations the adequacy and benefits of Hofstede's dimensions, as well as the lack of obviously superior alternative

cultural dimension, have already been discussed in this paper and I feel that those arguments still hold true. Second, as evidenced by the significant and marginally significant moderation findings that were established in this study, Hofstede's dimensions are capable of providing a meaningful measure of culture from which hypotheses regarding cultural differences may be developed and tested. Finally, it may be that the limited amount of variance to be explained by country level variables was too small or narrow to address with differences in cultural dimensions.

As mentioned earlier, individuals' responses to the questionnaire items displayed a fairly common trend across countries. Furthermore, it is likely that factors which countries may differ on (e.g., language, religion, geographic location/climate, education, gender/race diversity) account for some parts of that variance. Once those factors are partialled out of the equation, there would appear to be a very small piece of the pie left to be claimed by differences in culture. It may be the case that Hofstede's theory of cultural dimensions is not well suited for teasing apart extremely small differences between cultures. Instead, power distance, individualism/collectivism, and uncertainty avoidance may be more functional for use in studies when country or culture differences are likely to be a larger source of variance. It would be interesting to know if this fact holds true for alternative theories of culture as well.

Other Limitations

As has just been discussed, there are always potential problems with the use of any theory of cultural differences. The choice to employ the dimensions of culture that were developed by Hofstede was one that should have been made on an "objectively the

best measure of cultural differences" basis. However, the fact is that there currently does not exist an objectively ideal way of delineating the differences between cultures. As a result, the benefits and costs of using Hofstede's dimensions had to be weighed and a decision to use them or not be made. Confounded with this choice is the fact that no information could be gathered from the current sample with respect to their actual standings on these dimensions. As a result, there must be some concern about the usefulness of using Hofstede's cultural dimensions that were developed at a different time, in a different organization, within the context of a vastly difference world order given all the changes that have taken place in the last 20 years. Furthermore, is it reasonable to assume that all of the differences in culture are explainable in terms of the four (including masculinity/femininity) dimensions that Hofstede developed? Not really. There are likely many more discrete differences between cultures, and perhaps even more broad differences that are yet to be effectively measured. While the ability of researchers to address this issue is understandably limited, more improved theories of the differences between cultures would be welcomed if the field of cross-cultural psychology is to continue to develop.

The other obvious limitations to this study are in regard to the actual data collection process and the sample. First of all, while the constructs addressed by the questionnaire are not inadequate for use in academic studies, they could be greatly improved by the addition of relevant questions in each of the construct areas. Furthermore, item wording could be improved in order to limit the socially desirable answer effect and hopefully increase variance in responses. The socially desirable

response effect may even be increased in the current administration of the questionnaire by the use of computer administration that may cause concerns regarding anonymity. It should be kept in mind that this is an organizational survey and positive attitude responses by employees are not things that the company is hoping to avoid. To sum up this first point, it would be more ideal if future research in this area incorporated more control or input into the development of the questionnaire from which data is to be gathered. This lack of control over construct and item development was a major limitation to the current study.

A second limitation with regard to data collection was the sample itself. Everyone in the sample was an employee in the same American-based organization. As was discussed earlier, this fact may have important implications for the ability of national culture to influence the responses to the survey or the relationships between attitude variables. Instead, it may have been the case that the culture of the organization was strong enough that it overrode any country based cultural differences that may have otherwise affected the results of this study. Given that everyone was from this same company, the lack of significant results in the study may not be so surprising. This is not to say that the cultural differences suggested by Hofstede do not exist, even within global companies. In fact, Hofstede developed his cultural dimensions based on only one company and still found the differences between countries that allowed him to create his cultural dimensions. However, when attempting to use those cultural dimensions to suggest that culture will affect attitude variables that are developed within the organizational context, the effects of organizational culture in nullifying differences due

to national culture should not be underestimated. Future studies would be improved if samples from various companies, perhaps companies based in different nations or companies known to have limited organizational culture, could be included in the sample.

Another sample issue deals with the fact that all of the employees whose responses were used in this study were salaried employees. There may be something about salaried employees that limits the effects of any influence that national culture may have on them. For instance, increased education levels, higher salaries that allow them certain freedoms, and increased social status may serve to free these individuals from identifying too strongly with the cultural "constraints" that are prevalent in their own nation. It may be the case that hourly-wage workers who tend to be relegated to operating within the system of a national culture may identify differently with that culture and may in turn respond differently to the questionnaire items. It would be interesting to investigate the cultural influences on that level of employees within organizations rather than focusing only on the salaried employees.

A final limitation with regard to the sample was the inability to track employee responses across time. This hindered the ability to investigate the stability of the individual level relationships across time, and ruined any opportunity to ask any questions regarding the influence of culture over time. For example, do individuals from cultures high on individualism who also report increasing empowerment over time, report increasing amounts of job satisfaction more so than individuals from cultures low on individualism? The tracking of attitudes across time and the tracking of responses to cultural dimension items across time would benefit both the development of cultural

theory, and studies attempting to apply those theories to other research questions. That being said, it remains difficult to conduct employee attitude surveying without the guarantee to employees that their responses will be anonymous and confidential.

Conclusions

From a hypothesis standpoint, this study showed that there is reason to believe that empowerment is related to stress and job satisfaction in different way across cultures. Of specific interest is that fact that this study showed (in Hypotheses 10, and the exploratory hypothesis) that collectivism moderated the relationships between both job satisfaction and empowerment with levels of perceived stress (such that less stress was perceived) suggesting that perhaps social support and group-connectedness may be ways to alleviate at least some of the negative effects of stress on attitudes about the job. However, the majority of the hypotheses were not supported, suggesting perhaps that culture does not play nearly as big of a role in influencing attitudes about the job as some would have us all believe. Taken as a whole, I walk away from this study with a few conclusions in my mind that have little to do with the specific hypotheses.

To begin with, there is evidence that, despite using an arguably outdated set of dimensions, culture does moderate the relationships between some attitude variables. While the findings may be of little significance to the applied setting, from the standpoint of understanding, it is hard to argue with a significant interaction effect. Those significant findings, while not in the majority in this study, combine with the findings of many of the researchers mentioned in this paper to provide some reason to believe that cultural research is worth conducting. The existence of differences between cultures that

influence individual responses means that the book on cross-cultural psychology should not be shut; the work is not done yet.

That being said, another conclusion to be drawn from this study is the difficulty in conducting good cross-cultural research. As evidenced by the problems that arose during this study with regard to the questionnaire and the sample, future researchers in this area should make every effort to gain control of as much of the research process as possible. To the extent that one can select an appropriate sample (e.g., many countries, diverse organizations), control the development of the questionnaires (e.g., develop the items) and assess the concurrent cultural attitudes at the same time, the study of cross-cultural issues is sure to improve.

A third and final point about cross-cultural research is in regard to the status of this sub-field itself. While researchers addressing questions such as those in this study are of value to the overall compilation of knowledge about cross-cultural issues, there has been too much of a tendency to run with the theories of culture that have already been developed. Given the disagreements that exist in the literature about the best theories of culture, the best ways to define the boundaries of culture, and even the actual definition of culture, it seems like the best move forward would be to take a step back. I would like to see researchers with the necessary connections, time, and resources who are conducting, or would like to conduct cross-cultural research, return to a focus on the development of cultural theory/dimensions and the testing of the usefulness of the those theories of culture that already exist. Some amount of consensus in the literature would be an improvement over the current status of cultural theory that seems to be based on personal

preference and whatever is the newest idea to get published. Furthermore, important questions about culture do not seem to be currently addressed in the literature. One example of this is the lack of evidence for the consistency of culture over time. What are the effects of political, economic, or social change on the culture of a nation? Another point of interest is the different experiences of culture depending on class/status within a society that was discussed earlier. Researchers have tended to group everyone within a nation together in terms of culture without consideration of position within that nation's society. One last suggestion is that researchers attend to the question of national culture versus organizational culture. To what extent do theories of culture based on social interaction and general life questions apply to attitudes about the work place that can sometimes seem like an entirely different world? Are employees working for companies with weaker organizational cultures more influenced by country-based culture? These and other important questions about cultural differences between groups of people need to be more properly addressed before the field of cross-cultural psychology can move forward in a meaningful way.

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APPENDIX A

SCALE ITEMS

Job Satisfaction (all years)

Considering everything, how satisfied are you with your job?

Considering everything, how would you rate your overall satisfaction in the company at the present time?

I feel valued as an employee of the company.

My job makes good use of my skills and abilities.

How satisfied are you with the recognition you receive for doing a good job?

Stress (1996, 1998 & 1999 items are noted)

I do not feel excessive work-related stress. (all years)

Work-related stress does not interfere with doing my job well. (all years)

I do not feel excessive work-related stress. (all years)

The amount of work I am expected to do on my job is: (96)

Sufficient efforts are being made to manage work-related stress in my Workgroup. (98 & 99)

Work-related stress does not affect my job satisfaction. (98 & 99)

My workload allows me to satisfy my customers' requirement. (98 & 99)

The workload is distributed fairly among the people in my workgroup. (98 & 99)

My workload does not interfere with my ability to do a quality job. (98 & 99)

Normally, I am able to do my job during regular business hours. (98 & 99)

Teamwork (1996 and 1998 items are noted)

The people I work with cooperate to get the job done. (all years).

Diversity among employees (e.g., race, sex, nationality, age, background, personality, thinking style) is valued in my workgroup. (96)

My workgroup receives adequate feedback from internal customers. (all years).

There is close cooperation among departments to achieve quality. (all years).

I know my department's objectives (quality, cost, timing, etc.). (all years).

In my workgroup, expectations about the quality of our work are clear. (96).

My workgroup used feedback from our internal customers to improve the quality of our work (all years).

Empowerment (all years)

My supervisor communicates clear measures of accomplishment.

My supervisor encourages decisions to be made at the lowest appropriate levels in the organization.

My supervisor gives employees the necessary authority to accomplish tasks.