CULTURAL INTELLIGENCE: A NEW APPROACH TO MANAGE TEAMWORK IN CULTURALLY DIVERSE TEAMS

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ABSTRACT

With the rise of globalization, international assignments and multicultural teams, managing cultural diversity has become essential to organizations. As managing cultural diversity in team work has historically been a challenge (Earley & Gibson, 2002), academics and practitioners have directed resources toward enhancing understanding of how best to manage team diversity and improve effectiveness of international assignments (Tsui et al, 2007). Cultural Intelligence (CQ) is the ability to behave effectively in culturally diverse situations (Earley & Ang, 2003). Theory and research suggest that cultural diversity within teams often relate negatively to team member experiences of team processes, thereby negatively impacting team outcomes. The current study relies on similarity/attraction theory (Byrne, 1971), social identification theory (Turner, 1982) and self-categorization theory (Turner. 1982) to evaluate the relationship between cultural diversity and team processes (cohesion, participation, relationship and task conflict) and team outcomes (performance and satisfaction). The moderating effect of Cultural Intelligence on the relationship between cultural diversity and team processes was also explored. Data were collected from fourth year business school students working in teams of four to six to manage a virtual company competing with other teams in a stimulated market. A significant negative relationship was found between cultural diversity and team cohesion and participation; and a significant positive relationship was noted between cultural diversity and both team relationship conflict and task conflict. Furthermore, team satisfaction correlated positively with team cohesion and negatively with both types of team conflict while team performance was unrelated to team cultural diversity and perceptions of team processes. Finally, team members' CQ

positively moderated the relationship between team cultural diversity and team processes (cohesion, participation and relationship conflict), where the team was comprised of two different cultures only. Where teams were comprised of members from more than two cultural groups, the moderation was negative.

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CHAPTER 1: INTRODUCTION

1.1 Background

Globalization has resulted in a growing prevalence of international organizations, rising numbers of employees participating in international assignments and an increase in multicultural teams operating in home countries. Accordingly, an ability to interact with people of different cultures has become especially important to organizational wellbeing generally, and to international organizations in particular (Dalton & Daily, 2000).

International business issues -- which have been identified as among the most important critical strategic issues facing organizations (R. C. Hoffman & Gopinath, 1994) -- continue to be a point of focus for organizations as they join the global market (Tsui, Nifadkar, & Ou, 2007). Globalization and international business have reduced boundaries across nations, leading to what has been described as an increasingly "flat world" (Friedman, 2005), necessitating greater cross-cultural understanding. Not surprisingly, then, cultural studies have become increasingly prevalent.

Though teamwork has long received attention in the research literature, studies of diversity within teams (and the influence of such diversity on team processes and performance), started to appear in the published literature only

about a decade ago (S. G. Cohen & Bailey, 1997). There are now over 100 published studies that have investigated the influence of cultural diversity on organizational behavior, leading Tsui et al (2007) to describe the 21st century as the "century of international management research". More teams in organizations are becoming multicultural (Adler, 2002) and global teams have grown to be a source of competitive advantage (Kirkman, Gibson, & Shapiro, 2001). As a result of growing cultural diversity in the workforce, and its accompanying challenges (e.g. conflict in culturally diverse teams,(Jehn, Northcraft, & Neale, 1999), within-team cultural diversity continues to be of considerable interest to scholars and practitioners alike.

Despite this increasing attention given to the management of diversity in organizations, there have been significant challenges (Tsui & Gutek, 1999), particularly with respect to managing cultural diversity within teams (Earley & Gibson, 2002; Tsui & Gutek, 1999). With internationalization adding cultural complexity to organizations (i.e. with respect to languages, government regulations and global competition; (Bachmann, 2006), academics and practitioners have shifted resources to studying and managing international business (Tsui et al., 2007). Organizations, for example, have created more culturally diverse teams in an effort to enhance performance outcomes (Gluesing & Gibson, 2004; Webber & Donahue, 2001). "Increasing the variance in perspectives and approaches to work" is among the benefits that a diverse

workforce offers (Chatman & Flynn, 2001, p. 956). The challenge is to manage diversity so as to maximize this benefit. Accordingly, scholars are showing increasing interest in studying team diversity and international management (Tsui et al., 2007).

Little research has focused on analyzing and improving inter-cultural encounters within organizations (Gelfand, Erez, & Aycan, 2007). In order to understand and improve one's ability to behave effectively in different cultural settings, a reliable and valid measure of one's understanding of cultural diversity is essential. Until recently, there has been a "gap in our understanding of why some individuals are more effective than others in culturally diverse situations" (Ang et al., 2007). In an effort to address this, Earley and Ang (2003) introduced the construct of Cultural Intelligence (CQ), influenced by Sternberg's (1986) work on multiple intelligences. CQ is defined as a person's ability to behave and function effectively in culturally diverse situations (Earley & Ang, 2003). There are many measures of intercultural effectiveness, including the: intercultural development inventory (IDI) (Hammer, Bennett, & Wiseman, 2003); Overseas Assignment Inventory (OAI) (Tucker, 1999); the Prospector (Spreitzer, McCall, & Mahoney, 1997) and the Intercultural Assessment Center (IAC) (Stahl, 2001). However these assessments are focused mostly on an individual's potential to adapt to culturally diverse situations and not analyzing the factors contributing to individual success in adapting to the new culture. Furthermore, they focus on

training individuals to behave effectively in a specific culture and not their overall ability to behave effectively in any culture different from their own. Yet, we know little about the factors that contribute to one's effectiveness in culturally diverse situations. CQ research offers a fresh perspective in considering the factors that differentiate individuals' behavior and effectiveness in culturally diverse situations. CQ is a state-like characteristic, changeable over time and trainable. It is also likely to facilitate effectiveness in multi-cultural teams as individuals with higher CQ behave more effectively in culturally diverse situations (Earley & Ang, 2003) which could potentially contribute to more effective interaction within multicultural teams

1.2 Purpose and Contribution to Scholarship and Practice

This study examines teamwork in culturally diverse teams and the effects of CQ within such teams. Specifically it assesses CQ as a moderator of relationships between cultural diversity and team processes and outcomes. Student teams are studied to test these relationships.

Diversity and teamwork have been studied for a few decades. However, diversity in teams continues to challenge organizations (Tsui & Gutek, 1999). There have been opposing views of how diversity within teams affects teamwork. Diversity "appears to be a "double-edged sword", increasing the opportunity for creativity as well as the likelihood that group members will be dissatisfied and fail

to identify with their group" (Milliken & Martins, 1996, p. 403). The current study contributes to our understanding of diversity in teams by examining CQ as one factor that positively influences the relationship between team diversity and effectiveness – studied through team processes and team outcomes. As discussed in more depth, other moderators have been examined to better understand the relationship between diversity, team process and team outcomes but CQ has not been one of them. CQ is an emerging topic from which research on teamwork may benefit.

Few empirical studies have been published on CQ, which may be due to the relative newness of the concept (Ang et al., 2007). Of these, most have focused on the individual effects of CQ. While other studies have examined team diversity and performance, conflict, team interaction and satisfaction, none have looked at the influence of CQ on team processes and outcomes. Earley et al (2000) identified three fields of literature that have studied cultural diversity in teams: Organizational demography (O'Reilly III, Caldwell, & Barnett, 1989; Pfeffer, 1983; Tsui, Egan, & O'Reilly III, 1992), cultural diversity (Cox, 1993; Cox, Lobel, & McLeod, 1991; Watson, Kumar, & Michaelsen, 1993), and group research (Hackman, 1987; McGrath, 1984; Tajfel, 1982; Tajfel & Turner, 1979; Turner, 1985). Although culture has been studied from different perspectives in each of these major fields of study, there has been a shared focus on understanding the effects of culture and diversity in organizations, teamwork and

groups. Scant research has examined potential moderators of diversity-outcome relationships for organizations or work teams. This study introduces CQ as one such moderator.

Ang et al (2007) examined CQ as a predictor of intercultural effectiveness (i.e. cultural judgment and decision making, cultural adaptation and individual-level task performance). This study extends the analysis of CQ to the team level. CQ becomes important when dealing with culturally diverse teams. Emotional intelligence (Goleman, 1997)– which focuses on one's ability to understand one's own and others' emotions and adapt accordingly – positively correlates with individual and team performance, leadership effectiveness, social exchange reasoning, interpersonal and within-team interactions (e.g. (Bachman, Stein, Campbell, & Sitarenios, 2000; Day & Carroll, 2004; Mayer, Salovey, & Caruso, 2000; Rosete & Ciarrochi, 2005); However, emotional intelligence has been studied in the context of teams of individuals with similar cultural backgrounds. The construct of CQ seems especially appropriate for studying culturally diverse teams. It focuses on one's ability to understand culturally different individuals and to adapt accordingly. Thus, the influence of CQ is likely to be stronger with increasing team diversity. In short, the present study aims to enhance our understanding of team effectiveness (measured through team process and team outcomes) and team diversity by studying the influence of CQ on these factors.

CHAPTER 2: LITERATURE REVIEW, THEORIES AND HYPOTHESES

In this chapter the literature on the key variables of the study model (Figure 1) is reviewed. Of focal interest is the relationship between team diversity and team effectiveness. This study defines team as "a distinguishable set of two or more people who interact, dynamically, interdependently, and adaptively toward a common and valued goal/objective/mission, who have each been assigned specific roles or functions to perform, and who have a limited life-span of membership" (Salas, Dickinson, Converse, & Tannenbaum, 1992, p. 4). Team effectiveness refers to all aspects of teamwork contributing to better team processes and team outcomes. In some studies team effectiveness has been used interchangeably with team performance or team outcomes (S. G. Cohen & Bailey, 1997; Mathieu, Maynard, Rapp, & Gilson, 2008), but in the current study, team effectiveness refers to the overall quality of teamwork including team social processes, team outcomes and team experience (Hackman, 1987) for which a more in-depth analysis follows.

There have been many studies on teamwork (Guzzo & Dickson, 1996), each building on a traditional input-process-outcomes (I-P-O) team effectiveness model (McGrath, 1984). Inputs refer to team member and situational characteristics prior to team formation. The process refers to how the inputs interact; the outputs are the end results of the team activity. Previously team

process included "task work" and "teamwork" (McIntyre & Salas, 1995); as the names imply, task work is more focused on how team members work together to complete a task; teamwork is more focused on team member interactions more generally. More recently, Marks et al (2001) developed a three dimensional team process model including transition processes (the preliminary team activities involved in preparing for teamwork, such as planning), action processes (the activities that occur during the teamwork as members are working together toward their collective goal, such as communication and participation) and interpersonal processes (the part of teamwork which is focused on team members' interpersonal relationships and how they interact with one another). Team process has been a key variable in team effectiveness (Mathieu et al., 2008) and many studies have confirmed the mediating effect of this variable. Positioning team processes as mediator, however, detracts attention from identifying non-process related mediators (e.g. team member psychological safety) (Mathieu et al., 2008). Ilgen et al. (2005) accordingly offer a more comprehensive input-mediator-outcome model of team effectiveness wherein the mediator consists of process and non-process variables alike. Included in the non process variables are the emergent states which mediate the relationship between team input and team output; some of the more prevalent emergent variables in team effectiveness studies include team confidence, team empowerment, and team cohesion. The model proposed in the current study includes process variables, such as participation and team conflict, as well as

cohesion which is an emergent mediator variable. An explication of this model follows.

The central theories of diversity and teamwork are social identification theory (Turner, 1982), self-categorization theory (Turner, 1982), and similarity/attraction theory (Byme, 1971). Self-categorization theory and social identification theory suggest that as a means to developing self-esteem, individuals compare themselves to others with whom they are similar. They start by identifying themselves as belonging to a group and then compare and anchor their self-image with members of that group. The self-categorization mainly happens based on visible characteristics (Stangor, Lynch, Duan, & Glas, 1992) such as age, gender, race, religion, status and other easily detectable characteristics. This process is defined as social identity (Tajfel & Turner, 1985). Self-categorization can result in perceiving "out group" members as less trustworthy and/or less cooperative than one's own group members (Tajfel, 1982). Similarity/attraction theory suggests that individuals are more willing to interact with others with whom they are most similar (in terms of both attitude and demographics) and have the most pleasant experiences. This may be due to shared life experiences among individuals with backgrounds similar to their own. These shared experiences enable individuals to better identify with team members with whom they are similar. For this reason, demographic diversity can give rise to strained team processes and poor team performance (O'Reilly III et

al., 1989) (e.g. brought about by weaker communication, less cohesion and weaker integration; (Pfeffer, 1983).

Studies looking at diversity, team process and performance have reported conflicting results (Milliken & Martins, 1996; Williams & O'Reilly, 1998), necessitating more in-depth analysis of these relations and what other factors may contribute to them. Although diversity can improve creativity and quality of a group decision (Priem, Harrison, & Muir, 1995), diversity can negatively affect teamwork through stereotyping, emotional conflict and turnover (Pelled, 1996; Tsui et al., 1992).

Although there have been indications that both task diversity and bio-demographic diversity may positively influence team performance (S. K. Horwitz & I. B. Horwitz, 2007), there continues to be mixed findings in this regard. Task diversity refers to diversity in how tasks are performed by different team members whereas bio-demographic diversity reflects team member individual biological and demographical diversity including, but not limited to, gender, age, race, and personality. Historically it has been reported that diversity in individual characteristics such as personality and functional background has a more positive effect on teamwork (L. R. Hoffman, 1959; Levy, 1964), where diversity in race and gender has a negative effect on team process and performance (Zenger & Lawrence, 1989). More recently, research has shown that team

members' deep level differences (attitudes, values and beliefs) have more negative effects on team process and performance in the long term than do surface level differences (e.g. physical features; (Harrison, Price, & Bell, 1998)). Many studies have found self-categorization to negatively influence team processes such as cohesiveness, cooperation, communication and to contribute to team conflict and decreases in team satisfaction (e.g., Crocker & Major, 1989; Martin & Shanahan, 1983; Moreland, 1985; W. G. Stephan & C. W. Stephan, 1985; Triandis, Kurowski, & Gelfand, 1994).

In sum, team performance in culturally diverse teams is undermined through team processes as a result of self-categorization and similarity/attraction dynamics. Individuals from different backgrounds often fail to identify with people who are different from themselves, resulting in strained or challenged social interactions. A review of demography and diversity in organizations (Williams & O'Reilly, 1998) reveals how self-categorization and similarity/attraction theory influence group processes, which in turn impact group performance. Moderators of this relationship have been studied, including common goals and collectivist culture, both of which positively influence the relationship between team process and team outcome. The present study examined team cultural intelligence (measured through individual team member's cultural intelligence aggregated to team level cultural intelligence) for its positive influence on team processes. Specifically, CQ is likely to enable individuals to better understand and

appreciate people of different cultures, thereby resulting in better team processes and superior team performance.

While CQ is an individual construct, I examine CQ aggregated to the team level.. Often in organizational or group studies, researchers depend on lower level data to aggregate to a higher level due to limitations of measures available for higher level indicators (Chan, 1998). Team level CQ is comprised of the team members' combined (i.e. summed) CQ, scores. Although alternative aggregation methods are available (e.g. direct consensus model, reference-shift model, dispersion model; Chan, 1998) I chose the additive model because amount of CQ at the team level (a team attribute) was more relevant to my hypothesized model than was consensus or within-team variance.

High CQ among team members is likely to create a more respectful atmosphere where individuals realize, accept and accommodate team members' cultural differences. Higher CQ individuals in the team, create a higher overall team CQ which is expected to result in a more culturally accepting and accommodating team environment. This is similar to the "loose coupling" framework of multicultural teams – characterized by mutual understanding and approachability within teams (Bachmann, 2006)– and associated positively with teamwork processes and outcomes.

2.1 Variables

There are numerous factors that can be considered when studying teamwork and diversity. Previous studies have focused on different aspects of team effectiveness. A popular description of team effectiveness has three criteria (Hackman, 1987) which interact with one another: (1) the outcome of the team efforts (e.g. performance); (2) within-group social process and emergent variables referred to earlier, (such as conflict management, team interaction, and cohesion); and (3) team member experiences (e.g. team satisfaction). Variables from each of these three team effectiveness criteria were examined in the current study.

2.1.1 Independent Variables

2.1.1.1 Cultural Diversity

Culture is a multi-dimensional concept with over one hundred definitions. Kroeber and Kluckhohn (1952) verified 164 different definitions of culture; the number of definitions has grown significantly since. As a result there is a wide range of cultural diversity measures available. On the surface, cultural diversity can be defined as differences in nationality, racio-ethnicity, or a combination of both. On a deeper level, cultural diversity refers to the differences in values held by team members. Furthermore, it can be measured as "the distance between

members' national culture" (Elron, 1997). Cultural diversity was measured in the current study at two different levels. The first is based on self-reported identification with a culture. Participants reported the culture they belonged to and then these self-identified cultures were used as each team member's culture. The cultural diversity was measured as the variety of cultures presented in each group as described in the methodology section which follows.

The second level of analysis for cultural diversity was based on one of Hofstede's (Hofstede, 1991, 1980) cultural dimensions; Individualism-Collectivism. Hofstede's main cultural dimensions are Power Distance, Individualism-Collectivism, Masculinity-Femininity, and Uncertainty Avoidance. Power Distance refers to society's acceptance of power differences among its members in organizations and institutions. In societies with higher power distance, people accept an unequal distribution of power and treat one another in ways reflecting these power differentials. Individualism-Collectivism refers to the degree individuals are tied into groups versus independent entities. Highly individualistic societies have looser social ties and are typically more independent in thought and action relative to collectivists. In societies high in collectivism individuals identify with a group and develop and grow as part of that group. That is, collectivists have strong and cohesive bonds with individuals of their group and feel an obligation to fulfill normative expectations for thinking and behaving interdependently, taking into consideration other members of their

collective. For collectivists, extended families play a more important role in their lives, relative to their individualistic counterparts. Furthermore collectivist societies encourage functioning as part of a group compared to individualist societies that encourage functioning individually and independently. Masculinity-Femininity reflects an orientation toward gender role differences. In high Masculinity societies men are the dominant gender. In contrast, within societies high in Femininity there is a greater degree of gender equality. Uncertainty avoidance refers to a tolerance for ambiguity. In societies high in uncertainty avoidance there tends to be a greater intolerance of ambiguity and "the unknown", and a structured and predictable social order is preferred.

Individualism-Collectivism reflects team members' attitudes and values toward groups. Participants with higher individualism scores are more likely to be self focused and value individual achievement, whereas people high in collectivism are likely to be more team oriented and to value team achievement over individual achievement (Hofstede, 1991, 1980). This dimension is important in teamwork as it is likely to highly influence how individuals behave in teams. Cultural diversity is captured more in-depth through measuring individual team members' scores on individualism-collectivism as it provides an assessment of individual differences beyond the surface level differences captured in the other methods of capturing team diversity. The numerical value for this cultural dimension was determined though self-reported questionnaires. The standard

deviation reflecting the distance between team members' scores on this dimension within each team was used as an indicator of the degree of within-team cultural diversity.

2.1.1.2 Cultural Intelligence

A commonly used definition of CQ refers to a person's capability to behave and function effectively in culturally diverse situations (Earley, 2002; Earley & Ang, 2003). It has four factors: meta-cognitive, cognitive, motivational and behavioral (Earley & Ang, 2003). Meta-cognitive refers to one's curiosity and enjoyment to learn about new cultures; the cognitive factor refers to specific knowledge of different cultural settings; the motivational factor refers to the drive and interest to adapt to a new culture; and the behavioral factor refers to a person's ability to adapt their behavior to a new culture. The aforementioned factors all contribute to one's ability to act effectively in a new culture independently. In other words CQ is a "multidimensional construct helpful in situations involving cross-cultural interactions characterized by differences in race, ethnicity and nationality" (Ang et al., 2007). Although CQ has four different dimensions, it is treated in the current study as an overall index of effectiveness in culturally diverse situations. Ang et at. (2007) define the four dimensions of CQ as meta cognitive, cognitive, motivational and behavioral, however they conceptualize the overall CQ as an aggregated multidimensional construct

measuring the overall ability to function affectively in a culturally diverse situation. Overall CQ is a summation of the four dimensions which were significantly related in the present study (r = 0.47 to 0.61; mean = 0.56; Table 1).

CQ is a new concept with growing interest as a topic of research. Thus, very few empirical studies have been conducted on CQ. The empirical studies on CQ and personality suggest that Openness is the only personality trait related to all 4 factors of CQ (Ang, Van Dyne, & Koh, 2006). Studies of CQ within the workplace have supported a positive relationship between CQ and cultural judgment and decision-making to accept overseas assignments (Ang et al., 2007). Other research has looked at motivational factors of CQ (MOT1-5 questionnaire for CQ measure) in individuals and their relationship to realistic expectations of cross-cultural assignments (Templer, Tay, & Chandrasekar, 2006). Still other studies have looked at using assessment centers to measure CQ, which provides for a "person-in-situation" measurement of CQ (Harris & Lievens, 2005). However, there is a strong need for research to explore the effects of CQ on various individually- and organizationally- relevant outcomes. The continuing problem of managing cultural diversity within teams (Earley & Gibson, 2002; Tsui & Gutek, 1999) combined with CQ being of potential value in better understanding the phenomenon, presents a promising research opportunity. Currently there are very few empirical studies of CQ and none on CQ and teamwork. Thus, conducting a theory-based empirical study on CQ and

teamwork should yield benefits for managers in their efforts to identify effective ways to best harness within-team cultural diversity to advantage and for scholars in their effort to better understand improving within-team cultural diversity team interaction.

2.1.2 Process Variables as Mediators

Team processes have been examined in most team effectiveness studies (Mathieu et al., 2008). Team processes have been divided into tasks (and roles) individuals perform to accomplish team objectives (i.e. task-work), and the interactions among individuals that facilitate task accomplishment (i.e. teamwork) (McIntyre & Salas, 1995). Both task work and teamwork are mediators of team outcomes, but teamwork is the most studied mediator in the team effectiveness literature (Mathieu et al., 2008) and served as the focus of my study.

Marks et al. (2001) divided team processes into three categories: *transition process*, *action process* and *interpersonal process*. The *Transition process* refers to preliminary stages of preparing the team for teamwork, such as planning. It has received the least amount of attention in the literature. Action process refers to actions of team members during their teamwork, such as communication and degree of participation in the team. Finally, interpersonal process refers to member interactions during teamwork, and includes conflict and

team confidence building. Mathieu et al. (2008) argued that there are other mediators not captured in these categories (e.g. team empowerment and team cohesion) which they refer to as emergent states.

Given the complexity of teamwork and the extent of research and findings on this topic, there are numerous variables that could be studied when looking at team effectiveness. However, this study focuses on one mediating variable from each of three categories: team participation (for action process); team conflict (for interpersonal process) and team cohesion (for emergent states).

2.1.2.1 Team Participation

Teamwork often results in better performance outcomes than individual work (Collins & Guetzkow, 1964) which may explain the prevalence of teamwork today. Exercises such as brain-storming have become part of teamwork in organizations. It requires team member's to share their ideas and thoughts freely and actively participate in team discussions. As a result team participation is an important part of team interaction affecting team performance (Watson & Michaelsen, 1988). Team participation is reflected in team members' ability to share ideas, ask questions, state their opinions and contribute to teamwork. Team participation is categorized under action processes in the teamwork literature and focuses on the actions of team members in working together (Marks et al., 2001). Team participation increases team member contributions

toward collective outcomes. Self-categorization may influence team participation negatively in culturally diverse teams as individuals from different cultures may be more reluctant to actively participate compared to members in more homogenous teams. In culturally diverse teams, for example, team members may not be comfortable expressing their thoughts and opinions. Furthermore, individuals from different cultures may be inclined to behave differently, potentially resulting in the dominant team culture excluding other team members. CQ is likely to contribute to team participation in culturally diverse teams as team members with higher CQ should be better able to understand and adapt to different culturally-based behaviors of their team members. Thus, this is an important variable to consider when studying team processes.

2.1.2.2 Team Cohesion

Team Cohesion has been defined from many perspectives. It refers to attraction between team members and positive interactions among them (Katz & Kahn, 1978) and to team commitment (Goodman, Ravlin, & Schminke, 1987). Beal et al (2003) categorized measurement of cohesion into three categories: Interpersonal attraction, task commitment and group pride. Most studies have captured team cohesion through team members' attraction defined as "the degree to which team members are attracted to each other" (Shaw, 1981, p. 213). Accordingly, team cohesion is typified in social cohesion (O'Reilly III et al.,

1989) which positively influences team outcomes (Beal et al., 2003). Team members who are attracted to one another, are proud to be part of the team and are committed to each other tend to experience superior social interactions and are therefore likely to work well together, resulting in better team outcomes. As the core of team cohesion is team members being socially attracted to one another, attraction-similarity theory offers an explanation for team cohesion. Thus, similarity among team members should relate positively to interpersonal attraction, resulting in more positive interactions within the team. Mathieu et al. (2008) consider cohesion an "emergent state" mediating the influence of antecedent variables on team outcomes, including team performance and satisfaction (Beal et al., 2003; LePine, Piccolo, Jackson, Mathieu, & Saul, 2008). Thus, my model places team cohesion as a mediator.

2.1.2.3 Team Conflict

Among the interpersonal processes identified as impacting team outcomes, conflict is the most established and most studied. Conflict refers to differences in opinion arising from differences in values, needs and demands. Conflict is a process driven from the tension created by these differences (De Dreu & Weingart, 2003). Since cultural diversity reflects individual differences, it can be a major source of conflict (De Dreu & Weingart, 2003; Pelled, 1996). Individuals with different life experiences and values bring different opinions and

values to a team. Conflict is of two types, task focused or interpersonally (i.e. relationship) focused (Jehn, 1994; R. S. Ross & J. R. Ross, 1989). Task conflict is created when there is disagreement on how and when certain tasks are to be performed; interpersonal conflict pertains to conflict that is focused more on non-task related personal differences. Some studies have suggested that conflict can influence team performance positively through introducing different perspectives, thereby increasing creativity (Levine, Resnick, & Higgins, 1993; Tjosvold, 1997) and more effective pre discussions (Schulz-Hardt, Jochims, & Frey, 2002). However meta-analysis of the relationship between conflict and performance has shown that both task- and relations- oriented conflict relate negatively to both team satisfaction and team performance (De Dreu & Weingart, 2003). This finding has been interpreted to suggest that the positive impact of diversity of perspectives is diminished through lack of flexibility and cooperation (De Dreu & Weingart, 2003).

While the two types of conflict have been recognized in the literature for decades, it was not until Jehn (1994, 1995, 1997) conceptually distinguished them and provided measures of each that their differences were systematically studied (De Dreu & Weingart, 2003). Earlier studies found that task conflict relates positively to team performance while relationship conflict relates negatively to team performance (Williams & O'Reilly, 1998). Jehn (1994, 1995, 1997) explains that relationship conflict creates a non pleasant interaction

between team members resulting in lower team satisfaction and team performance; however, task conflict, especially for non routine and complex tasks generate different perspectives on how the task is to be done, enabling team members to develop a deeper understanding of the task and required processes. This is purported to result in identifying process inefficiencies, resulting in higher team performance. However, De Dreu & Weingart (2003), in their meta-analysis revealed that both types of conflict relate negatively to team satisfaction and team performance. Both conflict types create a hostile team environment, reducing team collaboration, which, in turn, results in decreased team cognitive flexibility and team satisfaction. However, not surprisingly, De Dreu and Weingart (2003) reported relationship conflict to have a stronger negative impact on team satisfaction (r=-.54, p<0.05, K=14, N=1370) than task conflict (r=-.34, p<0.05, K=11, N=1048), which has been attributed to the emotional element of relationship conflict. Nevertheless, De Dreu and Weingart's (2003) meta-analysis reveals that both conflict types (though to differing degrees) correlate negatively with team satisfaction and team performance. Thus, it is likely that both conflict types will associate negatively with team outcomes in the current study.

2.1.3 Dependent Variables-Outcome Variables

2.1.3.1 Team Performance

Team performance can be defined on several levels including process and outcomes. It can be measured as part of team effectiveness (Hackman, 1987) or as an independent team outcome focusing on the degree to which a team achieved its goal (McLeod, Lobel, & Cox, 1996). It is sometimes categorized into three factors: the quality of team outcomes; the time for achieving these outcomes; and the efficiency of the process used to attain these outcomes. Team performance is the end result of teamwork and the heart of teamwork studies. Regardless of how it is defined, the outcome of teamwork in the input-mediator-output model is team performance and the focus on teamwork studies has been on identifying influences of teamwork and team processes that affect performance (Mathieu et al., 2008). When studying team diversity and teamwork, the focus has been on how to manage team diversity and team processes to increase team performance. In the current study, team performance refers to team success (relative to competing teams) in capturing market share, company profit and growth within a corporate environment simulated through computer software. It is measured by the final grade received by a team received based on performance over several weeks of the simulation exercise.

2.1.3.2 Team Satisfaction

Another important variable in team effectiveness is team satisfaction. Team satisfaction refers to the feeling of fulfillment and contentment with respect to one's team. It includes how individuals feel about their teamwork, their experience of working with their team members, their interactions and team results (Hackman, 1987). Team satisfaction is a team outcome fed by how team members worked together and the results they achieved as a team. Pleasant social interactions contribute to team satisfaction (Martins, Milliken, Wiesenfeld, & Salgado, 2003). The better that team members work with each other the more satisfied they are likely to be with their teamwork experience. Since satisfaction with team is likely to be negatively influenced by team diversity it has been included in my proposed model of team effectiveness. Specifically, team satisfaction, as measured here, is reflected in how satisfied team members are with their team experience.

2.2 Hypotheses

As shown in Figure 1, team members' CQ is proposed as a moderator of the relationship between team cultural diversity and team processes and outcomes. Team CQ is defined operationally as the mean of team members' individual CQ scores.

Cultural diversity and team participation. Team participation and within-team communications are processes that are likely to impact team outcomes. Heterogeneous teams have more "process challenges" (L. R. Hoffman, 1959) than do homogenous teams as the former requires greater adjustment to within-team individual differences (Adler, 2002). Self-categorization theory suggests that individuals modify their behavior according to their social group. Individuals develop their self-concept using their social group as a referent (Markus & Cross, 1990). Thus, individuals are more likely to share ideas with those similar to themselves and within the same social category within which they believe they belong. Thus, individuals are less likely to participate, speak freely and express their opinions when interacting with people of a different social category, including one defined by culture. Since team participation entails sharing ideas, openly expressing thoughts and raising questions, cultural diversity is likely to reduce team participation.

Hypothesis 1a: Team cultural diversity relates negatively to team participation

Cultural diversity's influence on team participation is moderated by team CQ. Culturally diverse teams comprised of members high in CQ are likely to have fewer process problems than members of culturally diverse teams comprised of members lower in CQ. This is because team members with higher

CQ are more likely to see beyond the surface differences and engage in idea sharing and participation with team members who are from a different cultural category. In addition, teams with high CQ will create a friendlier atmosphere despite team members' cultural differences, thereby encouraging all team members to participate and share their thoughts and ideas. This increases the chances of individuals becoming involved in team activities and voicing their ideas and opinions.

> *Hypothesis 1b: Team CQ (i.e. mean of team members' individual CQ scores) moderates the proposed (H1a) negative relationship between team diversity and team participation such that this relationship weakens as the CQ of the team members increases.*

Cultural diversity and team cohesion. Team cohesion includes interpersonal attraction, commitment and group pride (Beal et al., 2003). Cultural diversity is likely to adversely impact all these factors, thereby resulting in low team cohesion. Cohesion in teams facilitates achievement of team outcomes (Mullen & Copper, 1994). Based on the theory of similarity/attraction theory (Byme, 1971), individuals are more likely to be *attracted* to others who are similar to themselves and to prefer *interacting* with them over others. In addition, people are more likely to be committed to persons who are similar to themselves and to

people with whom they most closely identify. Accordingly, teams that are homogenous with respect to salient individual attributes that are considered important by their members are likely to display high quality member interaction and team commitment. It is also likely, for the same reasons, that these team members will experience higher levels of *team pride*. Pride of being part of the team is formed through shared values and support of what the team represent (Beal et al., 2003). Initially, this feeling is higher in homogenous teams as members have a stronger bond based on their shared values and ideologies for the salient individual characteristics they share. Because culture is often considered a salient characteristic, cultural diversity is likely to adversely impact all these facets of team cohesion (attraction to, interaction among, commitment to, and team pride in fellow team members).

Hypothesis 2a: Team cultural diversity relates negatively to team cohesion

Cultural diversity's influence on team cohesion is moderated by team CQ. People higher in CQ have the ability to adapt their behavior and act more appropriately to members of other cultures. High CQ leads to higher curiosity and interest to interact with individuals from other cultures. Those with higher CQ identify working in a diverse team as an opportunity to explore their cultural curiosity, therefore increasing their *attraction* to other team members.

CQ is likely to improve interaction with team members as it provides for a better understanding of other cultures and values. High CQ among team members is likely to lead to more harmony in within-team interpersonal exchanges among people of different cultural backgrounds, as high CQ reflects greater openness with, understanding of, and adaptability to, people of different cultures. Higher CQ individuals should experience better team interactions as they are more knowledgeable of other cultures, thereby reducing any risk of misinterpretations and potential conflict. Also team pride should be higher when a better understanding of other cultures and their values exists. Self-categorization theory supports a higher sense of commitment and pride within teams of similar background. This is due to shared values and better understanding of other team members. CQ provides team members with a better understanding of other team members' values and cultures, thereby improving team bonding and sense of pride. Because CQ is likely to positively influence these dimensions/aspects of cohesion, it is likely to moderate the proposed negative relationship between cultural diversity and cohesion.

Hypothesis 2b: Team CQ moderates the negative relationship between team cultural diversity and team members' cohesion (H2a) such that this relationship weakens as the team CQ increases.

Team cultural diversity and team conflict. Conflict is another factor that negatively influences teamwork outcomes. As noted previously, conflict can be of two primary kinds; task conflict and relationship conflict (Jehn, 1994; R. S. Ross & J. R. Ross, 1989). Since both conflict types relate negatively to team performance (De Dreu & Weingart, 2003) this study focuses on both relationship and task conflict. As cultural diversity is expressed in terms of differing values, opinions and behaviors it is likely to evoke relationship conflict (De Dreu & Weingart, 2003; Pelled, 1996; Pelled, Eisenhardt, & Xin, 1999; Walsh, 1988; Wiersema & Bantel, 1992). Moreover, differences in opinions are likely to lead to task conflict as well since individuals from different cultures often have different opinions of how things are to be done (e.g. the tasks) within the team (De Dreu & Weingart, 2003). Cultural differences may lead to different approaches to undertaking tasks within a team and the procedure for doing a particular task for members of one culture may not be familiar or acceptable to members of another culture. As such, individuals from different cultures working together on a task may experience conflicts when performing team tasks, thereby resulting in high task conflict.

Hypothesis 3a: Team cultural diversity relates positively to relationship conflict within teams.

Hypothesis 4a: Team cultural diversity relates positively to task conflict within teams.

Team cultural diversity's influence on team conflict is moderated by team CQ. High CQ individuals are more likely to understand and adapt to their team members' differences. Individuals with higher CQ are more motivated to understand other cultural values and adapt their behavior in a culturally diverse situation. In addition, high CQ individuals are more aware of cultural differences and have greater knowledge of other cultures which they can apply in culturally diverse situations. Because of their broadened perspectives the potential for misinterpretation of what other team members say or do is reduced, thereby lessening potential conflict. High CQ individuals (in comparison to their lower CQ counterparts) are more likely to accept differing interpersonal approaches and show more openness to new ideas and ways of performing tasks. This results in less conflict in teams.

Hypothesis 3b: Team CQ moderates the proposed positive relationship between team cultural diversity and within-team relationship conflict (H3a) such that this relationship weakens as the team CQ increases.

Hypothesis 4b: Team CQ moderates the proposed positive relationship between team cultural diversity and within-team task conflict (H4a), such that this relationship weakens as the team CQ increases.

The effect of diversity on team performance has been well studied, yielding largely mixed results (Williams & O'Reilly, 1998). Inconsistencies have been interpreted from two perspectives. On the one hand, it is has been argued that diversity brings a wider range of ideas to the team, resulting in higher creativity and new perspectives for problem solving. On the other hand, it has been argued that diversity in teams creates conditions for conflict, less participation, and less team cohesion. Perhaps whether team diversity has positive or negative effects depends on the type of issue with which the team is working. In any event, diversity must be managed effectively to yield positive team experiences. Based in self-categorization theory (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987), individuals prefer to work in homogenous teams than in heterogeneous teams; generally, they behave more effectively in homogenous teams than heterogeneous teams, resulting in higher team performance.

Team process variables mediating the effects of team cultural diversity on team performance. As described earlier, team outcomes are a result of team

processes such as participation and conflict, and emergent states such as cohesion. Since the relationships that team participation, conflict and cohesion have with team outcomes are well established, they are not reexamined as main hypotheses here. Given that cultural diversity is expected to have a direct negative effect on team processes (in this study, team participation and conflict); and team emergent state (in this study, cohesion), team performance is likely to be adversely impacted through the negative influence of team diversity on team processes and team emergent states. Team performance improves to the extent that team members get along with each other, are more involved in teamwork and are spending their energy on accomplishing team tasks rather than engaging in conflict. In sum, team participation affects team performance positively; team cohesion affects team performance positively and team conflict affects team performance negatively. On the other hand team diversity affects team participation and team cohesion negatively, and it affects team conflict positively.

Hypothesis 5: The negative relationship between team cultural diversity and team performance is mediated through team participation

Hypothesis 6: The negative relationship between team cultural diversity and team performance is mediated through team cohesion

Hypothesis 7: The negative relationship between team cultural diversity and team performance is mediated through team relationship conflict.

Hypothesis 8: The negative relationship between team cultural diversity and team performance is mediated through team task conflict.

Team satisfaction refers to individuals' overall satisfaction with their team experience. Generally, team satisfaction is negatively affected by team diversity (De Dreu & Weingart, 2003; Pelled, 1996; Pelled et al., 1999). According to the theory of similarity/attraction theory (Byme, 1971), individuals are more attracted to others who are similar to themselves and more satisfied with interacting with these individuals. In addition, as individuals are more comfortable in a homogenous group and identify more with individuals with similar backgrounds to themselves, they report more pleasant team experiences (Markus & Cross, 1990).

Team process variables mediating the effects of team cultural diversity on team satisfaction. Satisfaction with teamwork is generally higher in homogenous groups than in heterogeneous ones, because of a sharing of values and expectations. Team members' overall experience with working with others

within their team determines their overall satisfaction with the team. Team satisfaction is influenced by teamwork processes and team emergent states (Hackman, 1987). Team participation and involvement affect the teamwork experience. Working in a team environment where each member feels comfortable sharing their ideas and participating in discussions positively influences the team experience of each individual. Cultural diversity in teams is likely to influence team participation negatively as some team members may not feel comfortable sharing their ideas where the dominant culture of the team is different from their own. When team participation is low, individual member's overall satisfaction with the team is likely to suffer.

Hypothesis 9: The negative relationship between team cultural diversity and team satisfaction is mediated through team participation

Similarly, low team cohesion is likely to adversely impact satisfaction with the team. Team satisfaction results from team interactions; the more pleasant the experiences of team members, the more likely they are to be satisfied with their team. Team cohesion includes team member's attraction to one another, and thus their interaction with each other. According to the theory of similarity/attraction theory (Byme, 1971) individuals from similar cultures are more attracted to one another than individuals from different cultures. Since this

attraction and positive interaction results in a better teamwork experience, it is expected that:

Hypothesis 10: The negative relationship between team cultural diversity and team satisfaction is mediated through team cohesion

As stated earlier, team satisfaction is a result of team process and experience. Conflict is a team process that involves tension between team members, which negatively affect a team's overall experience and satisfaction. Cultural diversity is among factors that increases conflict in teams (De Dreu & Weingart, 2003; Pelled, 1996) diminishing team satisfaction.

Hypothesis 11: The negative relationship between team cultural diversity and team satisfaction is mediated through team relationship conflict.

Hypothesis 12: The negative relationship between team cultural diversity and team satisfaction is mediated through team task conflict.

The relationship between cultural diversity and cohesion, conflict and team participation (Hypothesis 1a-4a) and their mediating effect on team outcomes

and satisfaction (Hypothesis 6-9 & 11-14) have been well established in the literature (S. K. Horwitz & I. B. Horwitz, 2007; LePine et al., 2008; Mathieu et al., 2008; Williams & O'Reilly, 1998). However, the moderating effect of CQ on these relationships (Hypothesis 1b-4b, 5, 10) has not been previously studied.

CHAPTER 3: METHODS

3.1 Sample and Procedure

The data for this study were collected from fourth year business undergraduate students at McMaster University taking an undergraduate Marketing course. A total of 500 students from 13 different course sections were invited to participate. Students in this course were working on a seven week long team assignment in self-selected groups of four to six (average team size of 5.5). Data on previous team work experience of team members with other members of their team were collected. Eighty-five percent of the respondents had not worked with members of their team previously. The average age of participants was 22.04 and 40% were female. The students presented over 20 different cultural backgrounds resulting in culturally diverse teams.

The students were working on a Management Simulation where each team was running hundred million dollar companies for six simulated years. Each team company started with five products for their company with the option to expand product offerings up to eight. All teams were competing in the same market and against each other. For each simulated year each team had to make decisions about different aspects of their company's business and input their strategy into the simulation, which affected their market share, profit and company growth. Thus, team members had to reach consensus on each

business decision, thereby requiring high interaction and firm decision making processes among team members. The realistic nature of the simulation and the length of team work required made this team assignment ideal for the purposes of this study.

The self reported individual-level data were collected through paper and pencil methods across three phases. The research assistant handed out the questionnaires at the beginning of the class for each phase and gave students 20 minutes to complete and return the questionnaire. Respondents unable to complete their questionnaire during this time were asked to drop off the completed questionnaire at a drop off box at their earliest convenience. The data on predictor variables were collected at the beginning of the term. The data on the mediator variables were collected four weeks later after the teams had worked together. Finally, outcomes data were collected several weeks following phase 2 (i.e. once all term team work on the simulation was completed). Team performance was provided by the instructor for all the teams – performance scores were automatically computed by the simulation software based on virtual company's market share, profit and growth.

To reduce the potential for common method variance and single source bias (P. M. Podsakoff, MacKenzie, Lee, & N. P. Podsakoff, 2003), the data were collected at three different times, reflecting input, and throughput (mediator) and

output variables of my proposed model. Although most questions were self reported, surface level diversity was calculated based on participants' reports of the culture with which they most identified, and performance was measured objectively by the simulation software. Accordingly, the different sources of data and the different time of data collection help shield the data used for this study from risk of common method variance and single source bias.

As noted above, the self reported data were collected in three phases. Phase one occurred at the beginning of the term, after students had selected their team members and before they had started working together. During this phase students' CQ was measured using Ang et al.'s (2007) CQ 20-item inventory. In addition, other individual characteristics were measured, including individual's age, gender, education, nationality, the culture with which the individual most identified and team members' scores on individualism-collectivism. Out of 516 students approached, the response rate for this phase was 74% resulting in 381 responses.

The second phase occurred on the fifth week of the team project, reflecting year five of "managing their companies" within the simulated exercise. This phase measured team process variables which included team participation, emotional conflict, task conflict and cohesion. The response rate for this phase was 69% (353/516).

On the last week of class, and after students had completed their assignment, the questionnaire for the last phase of the study was distributed. This phase assessed individual team members' satisfaction with their team work. Although students had finished their team assignment by this time, they had not received their teamwork grades. Accordingly, team satisfaction is based on team interaction and overall team experience, unbiased by formal feedback on team performance. The response rate for this phase was 73% (375/516). A few weeks after the team projects were completed, the instructor provided the team project scores for each team which was objectively calculated based on each team company's performance in the simulated market.

To keep the responses anonymous, a research assistant collected the data for all three phases and matched responses within individuals, removing names of respondents before handing them to the researcher for analysis. Each participant was asked to provide their team name so that responses of the team members of each team could be grouped together and matched to their team grade. In total, data from 95 teams were collected, of which only 88 met the retention criteria of having data for at least three members from all three data collection phases.

3.2 Measurement Models

3.2.1 Cultural Diversity

Cultural diversity was measured in two ways. Firstly, participants were asked to report the national culture with which they most identify. The within-team heterogeneity of culture was measured using the Blau (1977) formula of $H = 1 - \sum P_i^2$, where "i" is the number of categories in the team and P is the portion of members belonging to each category. The categories in the team reflect the number of national cultural regions within which team members place themselves. Team diversity is reflected in a decimal number. If all members of the team belong to the same culture, H will be 0, reflecting homogeneity. The higher the value of H, the more heterogeneous is the team. This method was used to measure cultural diversity at the surface level. This type of diversity is referred throughout the current study as surface cultural diversity.

The second method to measure cultural diversity is drawn from Hofstede's (1991, 1980) individualism-collectivism value orientation. This score is measured at the individual level and is determined by a self-reported questionnaire of psychological collectivism (Jackson, Colquitt, Wesson, & Zapata-Phelan, 2006). Psychological collectivism measures individual differences on collectivism, reflecting individual team member's cultural differences. Respondents completed Likert Scale items that were summed to provide an overall individual based score

of collectivism. The standard deviation of these total scores (calculated within each team) reflects within-team cultural diversity on collectivism. This measure is referred throughout the current study as deep-level cultural diversity.

3.2.2 CQ

Team CQ was measured as the mean of individual scores on the CQ scale using Ang et al.'s (2003) measure of CQ. This measure captures four factors and is comprised of 20-items (overall CQ α=0.92): meta-cognitive CQ (four items; α=0.76); cognitive CQ (six items, α=0.84); motivational (five items; α=0.76) and behavioral (five items; α=0.84). The meta-cognitive factor reflects one's curiosity and enjoyment to learn about new cultures; the cognitive factor reflects specific knowledge of different cultural settings; the motivational factor reflects the drive and interest to adapt to a new culture; and the behavioral factor reflects a person's ability to adapt their behavior to a new culture. Responses were given on 7 point Likert scales (strongly agree to strongly disagree). The full questionnaire for CQ is on page 89.

3.2.3 Team Participation

Team participation was measured using a seven item questionnaire (α=0.75) by Watson and Michaelsen (1988). This measure focuses on team

affect and behaviors such as "some fear to disagree" or "some withhold questions". All participants completed this questionnaire reflecting their observation of their team members' participation after the teamwork was completed; then the mean of individual ratings of the aggregate behavior of their team members scores was calculated to provide an overall measure of team level participation. Responses were provided on a 7 point Likert scale (1=strongly agree to 7 = strongly disagree). The full questionnaire for participation is on page 91.

3.2.4 Team Cohesion

Team cohesion was measured using a five-statement questionnaire by Stokes (1983). This scale measures interpersonal attractiveness, the most popular aspect of team cohesion (Stokes, 1983). Example questions include: "Most of the people in the group are not the kind of people I would enjoy spending time with outside a team group session" or "I wish I had more time for socializing with other groups members". Responses were given on a 7 point Likert scale (1=strongly agree to 7=strongly disagree). Cohesion was measured at the individual level; however, the mean of the individual scores within a team provide an aggregate measure of team level Cohesion. The full questionnaire for cohesion is on page 91.

3.2.5 Team Conflict

Team conflict was measured using Jehn's (1995) measure of task and relationship conflict, which consists of 8 questions, 4 for each conflict type. The questionnaire captures the amount of tension among team members with respect to relationship conflict and task conflict. An example question for task conflict is: "people in your team disagree about opinions regarding the work being done"; and for relationship conflict an example item is "there was emotional conflict among members in your team". All conflict data were collected at the individual level but were aggregated to the team level for analysis. Responses were on a 7 point Likert scale (1=strongly agree to 7=strongly disagree). The team conflict was measured at the individual level, however, the mean of the individuals scores provided an aggregate measure of team level conflict (separately for task conflict and for relationship conflict). The full questionnaire for conflict is on page 91.

3.2.6 Team Performance

For the purposes of the current study team performance was defined in terms of a specific and objective team outcome measured through each team's performance on the management simulation described earlier. Each team was managing their company for 6 years (each week simulated as one year) within a

shared market and competing with companies managed by other teams. At the end of the term each team's performance was objectively scored automatically based on their market share, company profit and growth. Accordingly a grade was assigned to each team which was used as the measure of team performance for this study.

3.2.7 Team Satisfaction

Individual satisfaction with the team was assessed using a scale developed by Gladstein (1984). It included questions such as "I am very satisfied with working in this team" measuring how satisfied each team member was with their overall teamwork experience. As with the other scales noted above, responses were provided on a 7 point Likert scale (1=strongly agree to 7=strongly disagree). Individual scores were aggregated to the team level using the additive model (Chan, 1998). The full questionnaire for satisfaction is on page 92.

3.3 Data Analysis

Team level studies have always been a challenge as data are typically collected at the individual level and analyzed at the team level. This study is no exception. Although most of the variables (except performance) were collected from individuals, they were all aggregated to the team level. In a summary of

different levels of analysis and typology of composition models, Chan (1998) discussed several different types of multilevel models. The most common of these is the *Additive Model* where the higher-level unit is a summation of the lower level units. In this study team level cohesion, participation, conflict and satisfaction were measured by the mean of individual team members' responses for each of these variables. Other variables, such as surface team cultural diversity and performance were measured at the team level; deep level cultural diversity was operationalized in terms of the variance among individual scores resulting in one value per team. Thus, all variables were either measured at or converted to the level of the team to allow for team-level analyses.

Following data collection, responses were entered into SPSS at the individual level. All data were scanned for any missing variables. Depending on the missing value, it was decided whether the elimination or substitution approach to handling missing data was most appropriate for individual level data. For cases where one item measuring the same variable was missing, data were substituted by the mean of other records for that item. For cases where two or more items for the same variable were missing, the variable was eliminated for that individual case. Then the data were aggregated to the team level and reported on in a different column. Only variables for which three or more team members responded were included in the team level data (otherwise recorded as "missing"). Also, since this study analyzes the influence of cultural diversity on

team process and outcome and the interaction of CQ on these relationships, some degree of cultural diversity is required to assess and ascertain CQ's effects. CQ is only applicable when one is interacting with a culture different than his/her own culture; by definition CQ is one's ability to interact effectively in culturally diverse situations. As a result teams with cultural diversity value of zero (where all team members are from the same culture) were omitted and only teams with some degree of cultural diversity were analyzed. Team level data were scanned for missing variables and outliers. Teams with missing data were deleted so the analysis only includes teams that have some degree of cultural diversity and at least 3 team members participating in each phase. The data were scanned for outliers but no outliers were identified.

Mediation versus moderation. Testing for mediation and moderation is very common in applied psychology and management research. Mediation occurs when the independent variable affects the dependent variable through another variable- (i.e., the mediator). Moderation occurs when the strength of the relationship between the dependent variable and independent variable is influenced by a third variable (i.e., the moderator). It is also possible for a model to involve a combination of mediation and moderation. Several models have been proposed for the mediated moderator effect. In the current study the model is "First stage moderation model" (Edwards & Lambert, 2007) where team CQ moderates relationships between cultural diversity and teamwork process and

non process variables (team participation; team cohesion and team conflict), which in turn mediate between team cultural diversity and teamwork outcome variables (team performance and team satisfaction). Thus the relationship between team cultural diversity (the independent variable) and team outcomes is mediated by team processes (which include the three mediating variables of team conflict, cohesion and participation) and the relationship between team cultural diversity and mediators (team conflict, cohesion and participation) is moderated by CQ.

All analyses of relationships between input, mediator and output variables were performed twice: once with the surface level measure of cultural diversity (i.e. self reported regional cultural identification) and once with the deep measure of cultural diversity (i.e. individualism-collectivism).

CHAPTER 4: RESULTS

4.1 Descriptive Statistics and Zero Oder Correlations

Table 1 shows descriptive statistics for all variables for which data were collected at the *individual* level (outliers and missing values were deleted using the list wise deletion procedure). While analysis was done separately on data sets for which the pairwise and listwise deletion method was used, results obtained were similar. The results reported below are based on analysis of data for which the listwise deletion procedure was used for handling missing values. Accordingly, only individuals who participated in all three data collection phases are represented in this table. As shown in Table 1, internal reliabilities of all scales were satisfactory (0.75 to 0.95).

Table 1 shows CQ related positively with collectivism (r = .36, p < .01, N=126) and individual ratings of cohesion (r = .17, p < .05, N=126), but negatively with number of countries visited (r = -.26, p < .01, N=126). There were no significant relationships between the individual demographic data of age, gender and education and individual CQ.

Collectivism measured at the individual level correlated positively with participants' ratings of team cohesion (r = .28, p < .01, N= 126) and negatively with their perceptions of relationship conflict (r = -.16, p < .05, N= 126), task

conflict (r = -.23, p < .01, N=126) and positively with team satisfaction (r = .19, p < .05, N=126).

As summarized in Table 1, satisfaction with team related positively to cohesion (r = .51, p < .01, N=126) and negatively to relationship conflict (r = -.49, p < .01, N=126) and task conflict (r = -.37, p < .01, N=126), consistent with expectations.

Additionally, although not hypothesized there was a significant positive relationship between team collectivism values and team performance (r = .34, p < .05, N=41). However, team performance did not have a significant relationship with other variables in my proposed model.

4.2 Hypothesis Testing

Although data were collected at the individual level, all hypotheses were tested at the team level. Individual data for cohesion, conflict, participation and satisfaction were aggregated to the team level using the additive model (Chan, 1998) where the higher level unit (team level) is a summation of the lower level units (individual level) calculated as the mean of individual team members' responses for each variable. Cultural diversity was measured by two methods and each hypothesis was tested twice to incorporate both methods of cultural diversity. Surface level cultural diversity was measured in terms of the diversity

within each team as reflected in the country each team member said that they identified with most; deep level cultural diversity was measured as the difference between team member's collectivism values (team member collectivism standard deviation). Team performance was measured objectively, based on the scoring algorithm of the company simulation software. A summary of all hypotheses with tested results are presented in Appendix 1.

4.2.1 Direct Effects

As there was no significant relationship between the deep level cultural diversity - measured in terms of members' variance in their orientation toward collectivism - and any other variable, the results in this section report only on the surface level cultural diversity.

4.2.1.1 H1a: Team Cultural diversity and Team Participation

The hypothesized negative relationship between team cultural diversity and team participation was supported. Specifically, as shown in Table 2 within-team cultural diversity correlated negatively with team participation (r = -.42, p < 0.01, N=41).

4.2.1.2 H2a: Team Cultural diversity and Team Cohesion

Hypothesis 2a predicts a negative relationship between team cultural diversity and team cohesion, which was supported by the correlational results (r = - .52, p < .01, N=41) (Table 2).

4.2.1.3 H3a: Team Cultural diversity and Team Relationship Conflict

Hypothesis 3a predicted a positive relationship between cultural diversity and team relationship conflict. As shown in Table 2, this hypothesis is supported (r = .77, p < .01, N=41).

4.2.1.4 H4a: Team Cultural diversity and Team Task Conflict

Also shown in Table 2, the hypothesized (H4a) positive relationship between cultural diversity and task conflict was supported (r = .55, p < .01, N=41).

4.2.2 Mediating Effects of Team Processes

4.2.2.1 H5 & H9: Team Participation

Team participation was hypothesized to mediate the relationship between team cultural diversity and both team performance (H5) and team satisfaction (H9). The first step of testing this relationship requires a significant relationship between the independent variable and the outcome. However, cultural diversity

was not related to team performance (r = -.05, *ns*, N=41). Since the first condition of mediation was not met (Baron & Kenny, 1986), hypothesis 5 is not supported. While there are other tests for mediation , such as bootstrapping, which challenge the necessity of the first step of Baron and Kenny's (1986) mediation test (Shrout & Bolger, 2002), H5 would still not be supported with alternative analyses because there was no significant relationship between team participation (proposed mediator) and team performance (r = -.09, *ns*, N = 41) as well. For H9, the first step of Baron and Kenny (1986) mediation test was met where independent variable cultural diversity and outcome variable team satisfaction were significantly correlated (β = - 0.31, p < 0.05, N = 41), the second step of mediation test was met as well where independent variable cultural diversity is correlated to the mediator variable team participation (β = - 0.42, p < 0.01, N = 41). However, the third step of mediation testing the relationship between team participation and team satisfaction controlling for cultural diversity is not met (β = 0.3, *ns*, N = 41) resulting is insufficient support for H9. Although the mediating effect of team participation (between cultural diversity and team satisfaction) was not significant, the p value of .08 suggests this effect may have reached statistical significance with a larger sample size.

4.2.2.2 H6 & H10: Team Cohesion

It was hypothesized that team cohesion mediates the relation between team cultural diversity and both team performance (H6) and team satisfaction

(H10). However, surface cultural diversity did not relate to team performance (r = -.05, *ns*, N = 41). Since the first condition of mediation was not met (Baron & Kenny, 1986), hypothesis 6 is not supported. However, team cohesion mediated the relationship between cultural diversity and team satisfaction supporting H10. For H10, the first step of Baron and Kenny (1986) mediation test was met where independent variable cultural diversity and outcome variable team satisfaction were significantly related (β = - 0.31, p < 0.05, N = 41), the second step of mediation test was met as well where independent variable cultural diversity is related to the mediator variable team cohesion (β = - 0.52, p < 0.01, N = 41). The third step of mediation test, which is the relationship between team cohesion and team satisfaction controlling for team cultural diversity, is also supported (β = 0.41, p < 0.05, N = 41) resulting in support for H10 where team cohesion mediates the relationship between team cultural diversity and team satisfaction.

4.2.2.3 H7 & H11: Team Relationship Conflict

H7 & H11 proposed that team relationship conflict mediates between cultural diversity and team performance (H7), as well as between cultural diversity and team satisfaction (H11). Cultural diversity was unrelated to team performance (r = -.13, *ns*, N = 41), thereby not satisfying Baron and Kenny's (1986) first condition for mediation. Nevertheless, as expected, team relationship conflict mediated the relationship between cultural diversity and team satisfaction. For H11, the first step of Baron and Kenny's (1986) mediation test

was met where the independent variable of cultural diversity and the outcome variable of team satisfaction were significantly correlated (β = - 0.31, p < 0.05, N = 41). The second step of mediation test was met as well where the independent variable cultural diversity is correlated to the mediator variable team relationship conflict (β = 0.77, p < 0.01, N = 41). The third step of mediation testing the relationship between team relationship conflict and team satisfaction controlling for cultural diversity is also supported (β = - 0.49, p < 0.05, N = 41) resulting in support for H11 where team relationship conflict mediates the relationship between team cultural diversity and team satisfaction.

4.2.2.4 H8 & H12: Team Task Conflict

It was hypothesized that team task conflict mediates the relationship between team cultural diversity and both of team performance (H8) and team satisfaction (H12). Cultural diversity had no direct relationship on team performance (r = -.05, p > .05, N = 41). Since the first condition of mediation was not met (Baron & Kenny, 1986), H8 was not supported. Nevertheless, as hypothesized (H12), team task conflict mediated between team cultural diversity and team satisfaction. For H12, the first step of Baron and Kenny (1986) mediation test was met where independent variable cultural diversity and outcome variable team satisfaction were significantly related (β = - 0.31, p < 0.05, N = 41), the second step of mediation test was met as well where independent variable cultural diversity related to the mediator variable team task conflict (β =

0.55, $p < 0.01$, $N = 41$). The third step of mediation, testing the relationship between team task conflict and team satisfaction controlling for cultural diversity, is also supported ($\beta = -0.39$, $p < 0.05$, $N = 41$) resulting in support for H12 where team task conflict mediates the relationship between team cultural diversity and team satisfaction.

4.2.3 Moderating Effect of Cultural Intelligence

To test the moderating effect of CQ on the relationship between team cultural diversity and team processes of team participation, team cohesion, team relationship conflict and team task conflict, the independent variables and interaction terms were centered before calculating their interaction terms (product of the independent variables). Centering is performed to increase interpretability of variables (Aiken, West, & Reno, 1991; McClelland & Judd, 1993; Tabachnick, Fidell, & Osterlind, 2001). Centering is performed by calculating the mean of a variable and subtracting this mean from each data point, thereby creating a new set of values for each variable. The moderating effect of CQ was tested on each of the team process variables separately. The moderation effect was tested through hierarchical regression where in the first step team cultural diversity and CQ were entered into the regression, followed by their product (i.e., their interaction) in step two.

It was hypothesized that team CQ weakens the relationships between team cultural diversity and each of the four team process variables of team participation, team cohesion, team relationship conflict and team task conflict (Hypotheses 1b, 2b, 3b and 4b respectively). Because deep level team cultural diversity as measured by within-team variation in collectivism did not relate significantly to any of the four team process variables, the moderating effect of CQ was not tested using this measure of cultural diversity.

There was a significant moderating relationship of CQ on the relationship between surface level cultural diversity and team participation (ΔR^2= .13, F = 5.5, p < .01, N = 41). Although moderating effects of CQ on team participation was statistically significant, the direction of this relationship was not consistent with what was hypothesized (H1b). The observed moderating effects were plotted using Hayes's (2005) moderating effect formula:

$$Y = a + b_1 X_1 + b_2 M + b_3 (X_1 M)$$

Where a is the constant, Y represents the dependent variable, X_1 the independent variable, M the moderator. Respectively, b_1, b_2, b_3 represent the independent variable coefficient, moderator variable coefficient and the interaction variable coefficient.

As shown in Figure 2, where team diversity was low, teams with higher CQ reported a higher amount of team participation compared to low CQ teams. However, participation for high CQ teams decreased as team diversity increased, compared to low CQ teams. Accordingly H1b received no support because the significant moderating relationship observed was opposite to that hypothesized.

There was a significant moderating relationship of CQ on the relationship of surface level cultural diversity and team cohesion (ΔR^2= .12, F = 8.1, p < .01, N = 41). Although the moderating effect of CQ on team cohesion was statistically significant, the direction of this relationship was not consistent with what was hypothesized (H2b). Where team diversity was low, high CQ teams reported higher cohesion than did low CQ teams. However, team cohesion decreased at a greater rate for high CQ teams compared to low CQ teams where team diversity was high. Accordingly, H2b, which predicted that the negative relationship between team diversity and cohesion weakens as team CQ increases, was not supported (Figure 3).

There was a significant moderating relationship of CQ on the relationship of surface level cultural diversity and team relationship conflict (ΔR^2= .09, F = 26.1, p < .01, N = 41). Although moderating effects of CQ on team relationship conflict was statistically significant, the direction of this relationship was not consistent with what was hypothesized (H3b). Figure 4 shows the moderating

relationship of CQ on the relationship between cultural diversity and team relationship conflict. High CQ teams reported lower relationship conflict than did low CQ teams when team cultural diversity was low; however high CQ teams reported higher relationship conflict than did low CQ teams when cultural diversity was high. Accordingly, H3b is not supported.

The moderating effect of CQ on the relationship between surface cultural diversity and task conflict was statistically non significant (ΔR^2= .045, F = 6.8, p > .05, N = 41), therefore there was no support for H4b. However, p value was 0.11 with an R-square change of 4.5%. This suggests that perhaps with greater statistical power (larger sample size) a moderation effect may well have been found.

CHAPTER 5: DISCUSSION

5.1 General Overview

The purpose of this research was to better understand the team work experience in culturally diverse teams. This study was inspired by the need to address a gap in understanding why some multicultural interactions are more effective than others and the rising need to focus on inter-cultural encounters within organizations (Gelfand et al., 2007). This study supported the negative relationship between cultural diversity and team cohesion and team participation in addition to the negative relationship between cultural diversity and team relationship and task conflict. It was also shown that the effect of cultural diversity on cohesion and conflict in turn negatively affects team satisfaction. Furthermore, this study reveals a significant moderating effect of CQ on team cultural diversity and team processes in a direction other than what was hypothesized. A discussion of the theoretical and applied significance of these findings follows.

5.2 Individual Demographics and Cultural Intelligence

Although individual level relationships were not hypothesized, individual level data were analyzed to investigate predictors of CQ and how CQ of individuals affects their experience within teams. CQ was unrelated to gender, age or education. Perhaps this is due to the small variance in individual age and education, as most participants were in their early 20s and 3rd or 4th year of

university. However, there was a significant, positive correlation between individual collectivism values and CQ. This suggests that individuals who are most comfortable with working in teams may also be most inclined to wanting to know more about other cultures. They may also be most adaptive when working with individuals of different cultural backgrounds. This is consistent with the observation that collectivists tend to prioritize their social unit over self-interests (Hofstede, 1991, 1980), enabling them to move beyond their own beliefs, values and preferences and to be receptive to culturally-based individual differences of their team members.

Also noteworthy is the negative relationship between number of countries visited and an individual's CQ. Although not hypothesized, it was expected that exposure to other cultures would increase CQ because individuals would acquire more experiential exposure to other cultures. Through travelling, studying or living abroad, it is reasonable to expect that individuals would become more familiar with other cultures, which presumably should be reflected in higher CQ scores. Although this relationship requires replication with a different sample, one possible explanation for the observed negative correlation between CQ and countries visited lies with the phenomena of "illusory inferiority" and "illusory superiority", known more simply as the Dunning-Kruger effect (Kruger & Dunning, 1999), More specifically, individuals with lesser knowledge of other cultures may overrate how much they know, whereas individuals with the greatest exposure to

people of other cultures are most aware of how much they don't know, so they rate themselves low on a CQ measure. Considering the relative newness of the CQ construct, and the limited empirical studies in this area, no concrete conclusion can be drawn and further research is necessary to understand this relationship.

Individuals with higher CQ rated their team cohesion higher, suggesting that higher CQ individuals had a more positive feeling toward their team members and were more likely to connect with them socially compared to their lower CQ counterparts. Similarity/attraction theory suggests that individuals are more likely to enjoy interaction with others who are similar to themselves and as such, are more likely to be attracted to people who share a common culture with them. However, the positive correlation between CQ and cohesion could signify that individuals with higher CQ have higher tolerance and attraction toward individuals from different cultures. This attraction could be explained by their sense of curiosity and motivation to learn about other cultures. To better understand the implications of this relationship, further research is required at the individual level.

Other significant and expected relationships include the positive association between individual ratings of team cohesion and satisfaction with the team. Moreover both individual ratings of team relationship conflict and team task

conflict related negatively to individual ratings of satisfaction with team. As these relationships are well established in the team work literature, they can be considered a replication of the findings of past research (e.g. Mathieu et al., 2008; Williams & O'Reilly, 1998).

5.3 Cultural Team Diversity and Team Work

Historically, there have been conflicting results on the influence of diversity on teamwork (Milliken & Martins, 1996; Williams & O'Reilly, 1998). It is suggested that the positive influence of diversity increases the level of creativity due to differences in perspectives and ideas among team members, while the negative influence has been explained in terms of team dissatisfaction, high team conflict and low cohesion (Milliken & Martins, 1996). CQ was considered here as one factor that could perhaps diminish the negative impact of within team cultural diversity, and enhance its positive effects. The current study supported many of the well established negative relationships between team cultural diversity and team processes (cohesion and participation) and outcomes (satisfaction).

5.3.1 Cultural Diversity and Team Processes

The obtained negative relationship between team cultural diversity and team participation suggests that the cultural diversity within teams influenced team members' willingness to state their opinion and to participate more generally. This finding is perfectly in line with self-categorization theory (Turner et

al., 1987). Specifically, team members of a common cultural background are inclined to categorize themselves as most likely to share similar ideas, thoughts and preferences. This fosters conditions that facilitate open discussion and participation. Likewise, team cultural diversity related negatively to team cohesion. Specifically, members of culturally diverse teams were less likely to socialize and interact with each other outside of the team than were members of less culturally diverse teams. This is consistent with social identity theory which holds that individuals are more likely to identify and socialize with others who are similar to themselves. This was evident with respect to surface level cultural diversity but not with respect to a measure of deep level cultural diversity (i.e. collectivist values) and suggests that surface level cues of cultural differences may have more influence on team cohesion than deep level cultural differences, at least over the time frame over which data were collected here (i.e. 9 weeks).

The established findings in the literature on the positive relationship between team cultural diversity and relationship and task conflict (De Dreu & Weingart, 2003; Pelled, 1996) received support. This relationship was stronger for relationship conflict than for task conflict, suggesting that cultural differences have a stronger negative impact on how team members interact with one another than on how they approach the tasks they are working on. With the rise of cultural diversity, team member interaction becomes more complex due to the multicultural nature of the team. Miscommunication, misunderstanding and

mistreatment due to cultural differences provoke team members' emotional states, their feeling and discomfort toward team members and results in higher emotional conflict. Cultural differences lead to different approaches to tasks as well, giving rise to task conflict, though not to the same degree and intensity as for emotional conflict.

Overall, the findings suggest that perceived cultural differences and actual cultural differences may have different influences on team processes. Surface level cultural diversity had a significant relationship with all four of the team processes evaluated, whereas deep level cultural diversity (i.e. collectivist values) did not. Between-group categorizations tend to be first formed based on the most salient differentiating attributes of individuals (Triandis et al., 1994). Since, by definition, surface level cultural diversity is more salient than is value based cultural diversity, at least over a short time period, it is not surprising that the former had stronger relationships with team processes than did the latter. In this regard, these findings are consistent with other studies that have found stronger relationships between surface level measures of cultural diversity and team processes and outcomes than for deep level cultural differences (Williams & O'Reilly, 1998). This suggests that the two types of cultural diversity should be studied separately (Williams & O'Reilly, 1998). Differences in the relative influence of surface- versus deep- level cultural differences on team processes and outcomes may depend on the length of time over which data are collected.

That is, over longer time periods perhaps the deep level cultural differences become more salient – and more influential – as team members come to know more about each other through their ongoing interactions. In contrast, surface cultural differences are acknowledged as soon as the team members meet. This is supported by self-categorization theory wherein initial self-categorization happens based on salient characteristics (Stangor et al., 1992) such as age, gender, race, religion, status and other easily detectable characteristics applying to surface cultural diversity.

5.3.2 Cultural Diversity and Team Outcomes

Team performance. There was no direct relationship between team cultural diversity and team performance. Furthermore, team performance was unrelated to team processes (team cohesion, team participation and team conflict).

The nature of the teamwork required all team members to interact with one another regularly to reach consensus on decisions on how best to operate the fictitious company that they managed. The team performance was measured based on how well the company performed in terms of their market share, profit and company growth, computed by an algorithm accompanying the software. Moreover, the nature of the exercise required team members to work together on each decision – the simulation task was designed so as not to allow members to

work or act independently. Nevertheless, because one person could input the actual team decision, it is plausible that he/she could override the input of team members. As such, during team interactions, the influence of cultural differences may not have been reflected in team performance.

Team cultural diversity can facilitate team creativity (Williams & O'Reilly, 1998), thereby enhancing team performance on tasks that allow for such creativity. Creativity is most likely evidenced in an environment of low team conflict where individuals are encouraged to welcome differences in opinions and ideas (Levine et al., 1993; Tjosvold, 1997). However, the team exercise used here allowed for little creativity as rigid business decisions had to be made and fed into the business game. As each team had to agree on the final decision, efforts to reach consensus during team discussions likely revealed individual differences. These individual differences would conceivably lead to conflict, lower participation and reduced cohesion. This could account for the observed relationships between cultural diversity and team processes. The absence of any observed relationships between team performance and either team processes or cultural diversity may be due to one or more team members inputting decisions that did not reflect a team consensus (e.g. wherein the opinions or suggestions of members of a cultural minority were ignored, discounted, or marginalized). Under such circumstances, of course, team satisfaction is likely to be adversely

affected, and indeed a negative relationship was observed between cultural diversity and team satisfaction.

The only variable relating to team performance was collectivist values. Although not hypothesized, the positive relationship between these two variables is consistent with previously reported findings in the literature (i.e. (Earley & Gibson, 2002)). Team members with collectivist values are likely to prioritize the team's interests over self-interests, thereby being more receptive to, and accommodating of, the input of other team members. In such circumstances, team decisions benefit from the diversity of perspectives of all team members, resulting in greater team performance.

Team satisfaction. Cultural diversity related negatively to team satisfaction. Team satisfaction related positively to both team participation and cohesion and negatively to team conflict. As expected, teams reporting higher participation and cohesion also reported higher team satisfaction. Of course, team satisfaction related negatively to both types of team conflict. Moreover, the relationship between cultural diversity and team satisfaction was mediated by team participation, team cohesion and team conflict, consistent with past studies that have shown team diversity is associated with lower team cohesion, lower team participation and higher team conflict (Mathieu et al., 2008; Williams & O'Reilly, 1998).

5.4 Influence of Cultural Intelligence on Culturally Diverse Teams

Although CQ moderated the relationship between cultural diversity and team processes, the moderation was opposite in direction than expected. Perhaps this result reflects the potential ineffectiveness of CQ in the situation studied. Studies have supported the influence of cultural intelligence demonstrated in global assignments (Earley & Ang, 2003); cross cultural communication and decision making (Thomas & Inkson, 2004); cultural judgment, adaption and performance (Ang et al., 2007) and intercultural interactions (Thomas et al., 2008) where typically two cultures are involved. Cultural intelligence is likely most beneficial in situations involving two cultures, where the individual in question (i.e. the one for whom CQ is measured) is a member of the minority culture. The dynamics of CQ and its effectiveness may differ where an individual must work with a person from one other culture rather than when he/she must work with people of several different cultures simultaneously. In the current study high CQ teams (compared to low CQ teams) experienced higher cohesion, higher participation and lower conflict when team cultural diversity was low (i.e. only two different cultures represented in the team). However, high CQ teams (compared to low CQ teams) experienced lower cohesion, lower participation and higher conflict in highly culturally diverse teams (i.e. where three or more cultures were represented). This could be a case where a little knowledge of cultural differences primed these individuals to be particularly sensitive to individual cultural differences, leading them to try to

accommodate such differences. However, in highly culturally diverse teams that interact over short periods of time, this may have resulted in more fragmented interactions that may have been perceived by those of contrasting cultures as insincere or superficial. In turn, this would be likely to lead to lower levels of team participation and cohesion, and higher levels of conflict (Thomas & Ravlin, 1995). This study has shown that team participation and team cohesion decline more significantly (relationship conflict increases more precipitously) for high CQ teams than for low CQ teams as team cultural diversity increases.

An alternative explanation for the moderating effect observed could lie with limitations of the CQ measured used, given that this research domain is still in its infancy. Multiple definitions and potential applications of CQ have been identified in the literature (Thomas et al., 2008). Earley and Ang (2003) suggest that CQ is a measurable attribute that could potentially enhance cultural interaction (Earley & Ang, 2003). The measure of CQ used here was a self report 20-item scale measuring the meta-cognitive, cognitive, motivation and behavior components of CQ (Ang et al., 2007).

The ability to interact effectively with cultures different than one's own has been categorized under intelligence. Intelligence has been defined as the ability to select, shape and adapt to one's environment (Sternberg, 1997); social intelligence entails understanding self and others, contributing to more effective

interactions in social settings (Kihlstrom & Cantor, 2000). Measuring such a construct presents special challenges. For example, the measurement of emotional intelligence (which is among the most widely studied of the various social intelligences) was criticized initially for lack of specificity in conceptualization (Matthews, Zeidner, & Roberts, 2004). With time, however, more psychometrically sound measures of emotional intelligence emerged (Mayer et al., 2000). The measurement of cultural intelligence is likely to follow a similar trajectory – it is a "work in progress" (Thomas et al., 2008). Ang et al (2000) were pioneering in their conceptualization and operationalization of CQ, and it now behooves other researchers to build on this earlier work.

While limitations to this measure have been noted (Thomas et al., 2008), an alternative widely used measure of CQ was not available at the time this study was undertaken. However, a cultural intelligence project is currently underway, being led by David Thomas at Simon Fraser University, to better define, operationalize, and validate a non self-report situational judgment and scenario based measure of CQ.

There is no doubt that some individuals behave more effectively in culturally diverse situations than others (Ang et al., 2007; Earley & Ang, 2003; Thomas et al., 2008) As discussed earlier, it was expected that the attribute contributing to this effectiveness becomes more essential as team diversity

increases. However, as team cultural diversity increased, teams high in CQ (compared to their lower CQ counterparts) reported higher team conflict and lower team cohesion. In addition to the aforementioned explanation that CQ may be more effective when two, rather than more than two, different cultures are present, perhaps there were problems with the measure of CQ used or the findings may also relate to the specific situational parameters inherent in the team task and setting (e.g. 7 week team assignment, university setting, computerized stimuli). As argued by Thomas (2008), the essence of CQ that contributes to behaving effectively in cross-cultural situations may be best assessed behaviorally (rather than relying on self-reported perceptual data). This study used the self reported CQ measure which captured an individual's own perception of their CQ. However, their CQ may not have been manifested behaviorally in their interactions with team members of different cultures. In sum, the dimensions of CQ that are most likely to moderate the relationship between cultural diversity and team processes may not have been effectively assessed with the CQ measured used.

CQ related negatively to the number of countries participants said that they had visited, which seems counter intuitive. Perhaps, as noted previously, this finding is due to the Dunning-Kruger effect (Kruger & Dunning, 1999) wherein individuals with lesser knowledge fail to recognize that their knowledge is lacking (referred to as "illusory superiority"); and individuals with more

knowledge, recognizing how much more there is to learn, under-rate their knowledge (referred to as illusory inferiority"). Accordingly, self ratings of CQ may not have captured actual differences in CQ. As CQ moderated relationships between cultural diversity and all four team processes (team participation, cohesion, relationship and task conflict) in a direction *different* than that hypothesized, it is plausible to consider that some individuals scoring high on the self-ratings of CQ are actually lower on this attribute than are individuals with low self-ratings of CQ. Furthermore, some items used in Ang et al (2007) measure of CQ are very vague and open to different interpretation. For example "I know the legal and economic systems of other cultures". How many cultures and economic systems must an individual be aware of to self-rate a 5 on a 7-pt. scale, given the myriad countries world-wide? Given the large number of cultures throughout the world and their variance in values, customs and behaviors, it is difficult to capture true differences in CQ with self-report measures. Perhaps these measurement limitations help explain the incongruent moderating effect of CQ on cultural diversity and team processes found here and underscore the need for a more objective assessment of CQ.

All other hypothesized relationships between cultural diversity and team processes were supported. Specifically, relationships between cultural diversity and cultural processes were statistically significant and in the expected direction; cultural diversity related negatively to team participation and cohesion and

positively to task and relationship conflict. Moreover, teams with higher CQ reported higher levels of team cohesion and team participation and lower levels of task and relationship conflict. The unexpected moderating effect of team CQ may be due to limitations in the conceptualization and operationalization of CQ. (Thomas et al., 2008). Clearly more research is needed to ascertain the likely moderating effects of team CQ on the relationship between team cultural diversity and team processes and outcomes.

5.5 Practical implications

Given that the study of CQ is in its infancy, particularly with respect to team CQ, caution must be exercised in drawing conclusions on applied implications of preliminary findings. The results of the present study, however, suggest that the more culturally diverse a team, the more likely that team is to experience dissatisfaction, low cohesion, less participation, and higher levels of task and relationship conflict. Accordingly, managing diversity continues to pose a challenge for many organizations today, particularly for those operating in heavily multicultural environments and multi-nationals wherein global assignments flourish (Tsui et al., 2007). For such understanding effective cross cultural interactions remains important to organizations in today's global world.

As organizations are looking for ways to address cross cultural interaction challenges, CQ training could be an attractive proposition for many of these firms

(Earley & Ang, 2003). However, the results of this study suggest that higher CQ is beneficial for teams with low cultural diversity (e.g. interaction between two cultures) and not those with high cultural diversity (interaction of three or more cultures). Therefore, CQ training may help individuals participating in global assignments and working in a host country for a period of time, where individuals from two primary cultures interact. But the results of this study imply one should be cautious of applying CQ training to improve management in high culturally diverse settings.

The findings also suggest that caution be exercised in interpreting cultural awareness/cultural intelligence based on scores from self report measures. When training and preparing individuals for cross cultural interactions, it is essential to measure their likely effectiveness accurately and use of self reported measures may not be the most effective way to do this. Management cross-cultural training often involves exposing trainees to other cultures, customs and traditions. However, as suggested by the results reported here, such exposure may have an adverse effect on trainees' perception of their knowledge and familiarity with other cultures. The more they learn, the more they may realize how much more there is to learn. Therefore, use of other means of assessing cross-cultural intelligence (beyond self-assessment) should be pursued.

Furthermore, to prepare individuals for increasingly multi-cultural workplaces, it is important for educational institutions to consider how they might, through curriculum offerings, enhance students' awareness of how cross-cultural differences are likely to impact team processes and outcomes. As much student work today is done in teams, this provides an ideal opportunity for such initiatives. For example, instructors could assign membership to teams to ensure within-team cultural heterogeneity, and include training on team process skills, and on how best to harness the potential benefits of within-team cultural diversity, over and above the more typical emphasis placed on learning of substantive course content.

5.6 Limitations

One of the limitations of this study is that the model tested excludes many other potentially relevant mediating variables (e.g. team trust, team collaboration and cooperation). Although it would have been ideal to include all such variables, this was not feasible, as the questionnaires would have become impractically long. The variables that were selected for study are, however, representative of the class of variables from which they were chosen. There are multiple team mediators that could affect team outcomes which have been categorized as process and non process or emergent variables in the fuller input-mediator-outcome model proposed by Ilgen et al. (2005). The four mediator variables investigated in the current study represent all categories of team work mediators

(participation and team conflict as team processes, and cohesion as an emergent non process mediator variable).

An additional limitation to this study, as alluded to already, is the sole reliance on Earley and Ang's (2003) measure of CQ. This is a relatively new measure and its psychometric properties are yet to be firmly and widely established, with concerns having been expressed over the appropriateness of evaluating CQ through self-report assessments. The measure of CQ used was a self report 20-item scale measuring the meta-cognitive, cognitive, motivation and behavior components of CQ (Ang et al., 2007). While limitations to this measure have been noted (Thomas et al., 2008), an alternative widely used measure of CQ was not available at the time this study was undertaken. This measure has been used in multiple empirical studies since 2003 and the internal reliability of the measure for this study sample was very high (0.92).

Other limitations include the use of a student sample. However, given the need to involve as large a number of teams as possible, and the convenience of the sample, it made sense to rely on students. Moreover, the advantage of using such a sample is that the data are being collected in "real time" in a genuine team work context where "real", meaningful and objective team performance measures were taken over time. A further advantage to using student teams in this context is having access to a large number of teams working on similar tasks

over the same length in time under similar conditions. Gaining access to such a large sample offering similar conditions would be extremely challenging within a business setting. Moreover, fourth year undergraduate students are at the cusp of entering the workforce, thus enhancing the likely generalizability of findings to a business sample.

A further limitation is that the teams were self selected. While it would have been preferable to assign students to teams to ensure variance in heterogeneity in CQ within and across teams, this was not possible under the current circumstances. However, the sample teams were quite culturally heterogeneous. Furthermore, historical data on the experience of all study participants with respect to team work were collected so as to be able to control for the influence of such experience on team interactions, processes, and outcomes. Data showed that 85% of team members never worked with one another previously. Therefore, the self selected teams served the purpose of this study.

5.7 Future Research

While the findings supported previously established relationships between cultural diversity, team processes and team satisfaction, they revealed interesting and opposite effects of what was expected with respect to the moderating

influences of CQ. As such, further research is required to explore these unexpected results.

CQ moderated the relationship between cultural diversity and team processes opposite to that hypothesized for cohesion, conflict and participation. Furthermore, individuals who reported having been exposed to more cultures scored lower on CQ relative to those exposed to fewer cultures. This suggests exposure to other cultures undermines self reported CQ. Research is needed to further explore this finding. Further research could focus on individual's CQ reported prior to exposure to other cultures, followed by individual's exposure to other cultures through education, travel and interaction and then the change in their self reported CQ score afterwards. Comparing CQ scores pre/post exposure will enable researchers to test more directly whether such exposure results in lower self-reported CQ.

CQ had a positive effect on team processes when teams included only two cultures but had a negative effect when teams consisted of three of more cultures. This indicates that CQ may have a moderating effect for teams with lower cultural diversity that diminishes as team cultural diversity increases. Future research should test the moderating effect of CQ on team processes for a larger sample where the moderating effect is tested for teams with two different cultures, three different cultures, four different cultures and so on confirming

whether CQ's moderating influence decreases as the number of cultures presented in the team increases.

Considering that a Canadian student sample was used here, research should test further the links of the proposed model, using a non-student sample as well as a sample in a different setting. Canada is a multicultural country where individuals interact with multiple cultural groups on a regular basis. This is specifically true in Canadian educational institutions where students are drawn from a multitude of culturally diverse countries. The existing multiculturalism and culturally heterogeneous setting in Canada enables individuals to be aware and learn more about other cultures which may affect their CQ and behavior when interacting with other cultures. The differences in CQ levels of individuals drawn from homogenous versus heterogeneous cultures may provide further insights into the impact of exposure to other cultures as a predictor to CQ.

Future studies should also make use of alternate measures of CQ (self report and non self report). Advances in the CQ literature are also likely through use of qualitative research methods and designs. For example, interviewing team members on their experiences over time, or having them keep diaries of such experiences is likely to advance and deepen our understanding of the development and manifestation of CQ.

Finally, the elements of what constitutes effective CQ training should be carefully researched. Earley and Peterson (2004) identified the need for more individual specific intercultural training based on CQ. There is a dearth of follow-up empirical studies in support of CQ training. Clearly, CQ is an emerging concept that presents abundant research opportunities.

5.8 Summary and Conclusion

Managing cultural diversity and intercultural interaction has become vital for both research and practice in the last decade. CQ research has shifted the focus from cultural specific training and awareness to a more global mindfulness that could be applied across all cultures. Although CQ is a promising concept, it is yet to be operationalized fully. CQ has given rise to much interest among scholars with respect to the influence of cross-cultural differences on individual, team and organizational processes and outcomes. However, this line of inquiry is still very much in its infancy. In particular, researchers must ensure that a psychometrically sound and valid measure of CQ is widely available. Also, as is the case with the emergence of any new construct in the behavioral and organizational sciences, more research is needed to better understand the complexity of relationships between CQ (at the level of the individual, team and organization) and processes and outcomes. Only until such in-depth research is done are we likely to be in a position to confidently develop and administer

effective training programs aimed at enhancing CQ, and come to understand the potential benefits of such training.

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Appendix A: Tables

Table 1: Means, Standard Deviations, Correlations and Reliabilities of Individual Rating

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1.COL	3.51	0.98	0.86														
2.MC	3.73	1.07	.397**	0.84													
3.COG	4.16	1.08	.127	.587**	0.76												
4.MOT	3.51	1.23	.471**	.573**	.503**	0.83											
5.BEH	3.90	1.15	.161*	.597**	.611**	.473**	0.83										
6.COH	3.30	1.19	.286**	.176*	.043	.247**	.066	0.75									
7.RC	5.32	1.53	-.166*	-.056	-.038	-.069	.027	.648**	0.94								
8.TC	4.71	1.31	-.230**	-.027	.024	-.063	-.016	-.587**	.793**	0.82							
9.TP	4.26	1.19	-0.096	.094	.156*	-.013	.073	-.152*	.187*	.177*	0.86						
10.SAT	2.65	1.78	.195*	.095	-.039	.106	-.023	.518**	-.493**	-.376**	-.110	0.95					
11.GEN	.36	.48	-0.038	-.035	.074	.007	-.007	.077	-.055	-.049	.159*	.074					
12.CQ	3.83	.48	.359**	.837**	.819**	.792**	.820**	.166*	-.042	-.027	.091	.044	.011	0.92			
13.Age	21.99	.93	.090	.049	-.065	.001	.043	.013	-.023	-.019	-.161*	.061	-.207**	.009			
14.CV	5.13	1.74	-.161*	-.163*	-.225**	-.324**	-.144	.031	-.068	-.088	-.003	-.006	-.103	-.265**	.059		
15.EDU	410	6.12	.109	-.016	-.103	.040	.031	.067	-.209**	-.262**	-.203*	.089	-.177*	.012	.223**	.175*	
16.GPA	7.62	.497	-.108	.034	.078	.032	.087	-.147	.048	.020	-.166*	-.011	-.053	.070	.094	.136	.146

Listwise N=126
**Correlation is significant at the 0.01 level (2-tailed)
*Correlation is significant at the 0.05 level (2-tailed)

COL=Collectivism Values
MC=Meta Cognitive CQ
COG=Cognitive CQ
MOT=Motivational CQ
BEH=Behavioral CQ
COH=Cohesion
RC=Relationship Conflict
TC=Task Conflict
TP=Team Participation
SAT=Satisfaction
GEN=Gender
CQ=Cultural Diversity
Age=Age
CV=Countries visited
EDU=Education
GPA=Grade Point Average

Table 2: Means, Standard Deviations and Correlations of Team rating

	M	SD	1	2	3	4	5	6	7	8	9
1.SCD	.50	.16									
2.DCD	1.01	.45	.097								
3.COL	3.50	.44	-.042	-.064							
4.CQ	3.88	.48	.105	.215	.419**						
5.COH	3.35	.70	-.520**	.019	.041	-.099					
6.RC	5.40	.80	.770**	.093	-.037	.117	-.594**				
7.TC	4.87	.79	.545**	.078	.127	.178	-.519**	.863**			
8.TP	3.52	.70	-.416**	-.060	.046	-.181	.714**	-.607**	-.612**		
9.SAT	2.74	.88	-.307*	.122	.205	-.016	.459**	-.436**	-.447**	.368**	
10.MARK	16.38	2.44	-.052	.038	.343*	0.41	-.128	-.078	-.014	-.086	.113

Listwise N=41
**Correlation is significant at the 0.01 level (2-tailed)
*Correlation is significant at the 0.05 level (2-tailed)

SCD=Surface level Cultural Diversity
DCD=Deep-level Cultural Diversity
COL=Collectivism Values
CQ=Cultural Intelligence
COH=Cohesion
RC=Relationship Conflict
TC=Task Conflict
TP=Team Participation
SAT=Satisfaction
Mark=Team Performance

Table 3: Test of Team Participation as a Mediator of Cultural Diversity and Team Satisfaction

Variables	B	SE B	β
Step 1:			
Dependent Variable:			
Team Satisfaction			
Independent Variable:	-1.696	0.842	-0.307*
Cultural Diversity			
Step 2:			
Dependent Variable:			
Team Participation			
Independent Variable:	-1.825	0.639	-0.416**
Cultural Diversity			
Step 3:			
Dependent Variable:			
Team Satisfaction			
Independent Variable:			
Cultural Diversity	-1.029	0.901	-0.186
Team Participation	0.366	0.205	0.290

*p <0.05 ** p <0.01

Table 4: Test of Team Cohesion as a Mediator of Cultural Diversity and Team Satisfaction

Variables	B	SE B	β
Step 1:			
Dependent Variable:			
Team Satisfaction			
Independent Variable:	-1.696	0.842	-0.307*
Cultural Diversity			
Step 2:			
Dependent Variable:			
Team Cohesion			
Independent Variable:	-2.273	0.599	-0.520**
Cultural Diversity			
Step 3:			
Dependent Variable:			
Team Satisfaction			
Independent Variable:			
Cultural Diversity	-0.519	0.928	-0.094
Team Cohesion	0.518	0.212	0.410**

*p <0.05 ** p <0.01

Table 5: Test of Team Relationship Conflict as a Mediator of Cultural Diversity and Team Satisfaction

Variables	B	SE B	β
Step 1:			
Dependent Variable:			
Team Satisfaction			
Independent Variable:	-1.696	0.842	-0.307*
Cultural Diversity			
Step 2:			
Dependent Variable:			
Team Relationship			
Conflict	3.879	0.514	0.770**
Independent Variable:			
Cultural Diversity			
Step 3:			
Dependent Variable:			
Team Satisfaction			
Independent Variable:			
Cultural Diversity	0.393	1.263	-0.071
Team Relationship	-0.538	0.251	-0.491**
Conflict			

*p <0.05 ** p <0.01

Table 6: Test of Team Task Conflict as a Mediator of Cultural Diversity and Team Satisfaction

Variables	B	SE B	β
Step 1:			
Dependent Variable:			
Team Satisfaction			
Independent Variable:	-1.696	0.842	-0.307*
Cultural Diversity			
Step 2:			
Dependent Variable:			
Team Task Conflict			
Independent Variable:	2.696	0.664	0.545**
Cultural Diversity			
Step 3:			
Dependent Variable:			
Team Satisfaction			
Independent Variable:			
Cultural Diversity	-0.496	0.953	-0.090
Team Task Conflict	-0.445	0.193	-0.399**

*p <0.05 ** p <0.01

Table 7: Test of Cultural Intelligence as a Moderator of the relationship between Cultural Diversity and Team Participation

Variables	B	SE B	β
Step 1:			
Cultural Diversity	-1.761	0.643	-0.401**
Cultural Intelligence	-0.203	0.215	-0.139
Step 2:			
Cultural Diversity	9.584	4.600	2.184*
Cultural Intelligence	1.417	0.682	0.966*
Cultural Diversity X Cultural Intelligence	-3.027	1.217	-2.936**

(ΔR^2= .12, F = 5.5, p < .01, N = 41). *p <0.05 ** p <0.01

Table 8: Test of Cultural Intelligence as a Moderator of the relationship between Cultural Diversity and Team Cohesion

Variables	B	SE B	β
Step 1:			
Cultural Diversity	-2.253	0.609	-0.515**
Cultural Intelligence	-0.065	0.204	-0.45
Step 2:			
Cultural Diversity	9.496	4.282	2.170*
Cultural Intelligence	1.613	0.635	1.103*
Cultural Diversity X Cultural Intelligence	-3.135	1.13	-3.049**

(ΔR^2= .12, F = 8.1, p < .01, N = 41). *p <0.05 ** p <0.01

Table 9: Test of Cultural Intelligence as a Moderator of the relationship between Cultural Diversity and Team Relationship Conflict

Variables	B	SE B	β
Step 1:			
Cultural Diversity	3.860	0.523	0.766
Cultural Intelligence	0.061	0.175	0.036
Step 2:			
Cultural Diversity	-7.278	3.594	-1.445*
Cultural Intelligence	-1.530	0.533	-0.909**
Cultural Diversity X Cultural Intelligence	2.972	0.951	2.511**

(ΔR^2= .09, F = 26.1, p < .01, N = 41) *p <0.05 ** p <0.01

Table 10: Test of Cultural Intelligence as a Moderator of the relationship between Cultural Diversity and Team Task Conflict

Variables	B	SE B	β
Step 1:			
Cultural Diversity	2.633	0.670	0.532**
Cultural Intelligence	0.202	0.224	0.122
Step 2:			
Cultural Diversity	-5.362	4.998	-1.084
Cultural Intelligence	-0.940	0.741	0.568
Cultural Diversity X Cultural Intelligence	2.133	1.322	1.835

(ΔR^2= .045, F = 6.8, p > .05, N = 41) *p <0.05 ** p <0.01

Table 11: Summary of Results of the Hypothesis Tested

Hypotheses	Supported
Hypothesis 1a: Team cultural diversity relates negatively to team participation	Yes
Hypothesis 1b: Team CQ (i.e. mean of team members' individual CQ scores) moderates the proposed (H1a) negative relationship between team diversity and team participation such that this relationship weakens as the CQ of the team members increases.	**No** (moderation supported but in the opposite direction)
Hypothesis 2a: Team cultural diversity relates negatively to team cohesion	Yes
Hypothesis 2b: Team CQ moderates the negative relationship between team cultural diversity and team members' cohesion (H2a) such that this relationship weakens as the team CQ increases.	**No** (moderation supported but in the opposite direction)
Hypothesis 3a: Team cultural diversity relates positively to relationship conflict within teams.	Yes
Hypothesis 3b: Team CQ moderates the proposed positive relationship between team cultural diversity and within-team relationship conflict (H3a) such that this relationship weakens as the team CQ increases.	**No** (moderation supported but in the opposite direction)
Hypothesis 4a: Team cultural diversity relates positively to task conflict within teams.	Yes
Hypothesis 4b: Team CQ moderates the proposed positive relationship between team cultural diversity and within-team task conflict (H4a), such that this relationship weakens as the team CQ increases.	**No**
Hypothesis 5: The negative relationship between team cultural diversity and team performance is mediated through team participation	**No**
Hypothesis 6: The negative relationship between team cultural diversity and team performance is mediated through team cohesion	**No**
Hypothesis 7: The negative relationship between team cultural diversity and team performance is mediated through team relationship conflict.	**No**
Hypothesis 8: The negative relationship between team cultural diversity and team performance is mediated through team task conflict.	**No**
Hypothesis 9: The negative relationship between team cultural diversity and team satisfaction is mediated through team participation	**No**
Hypothesis 10: The negative relationship between team cultural diversity and team satisfaction is mediated through team cohesion	Yes
Hypothesis 11: The negative relationship between team cultural diversity and team satisfaction is mediated through team relationship conflict	Yes
Hypothesis 12: The negative relationship between team cultural diversity and team satisfaction is mediated through team task conflict.	Yes

Appendix B: Figures

Figure 1: Proposed Model

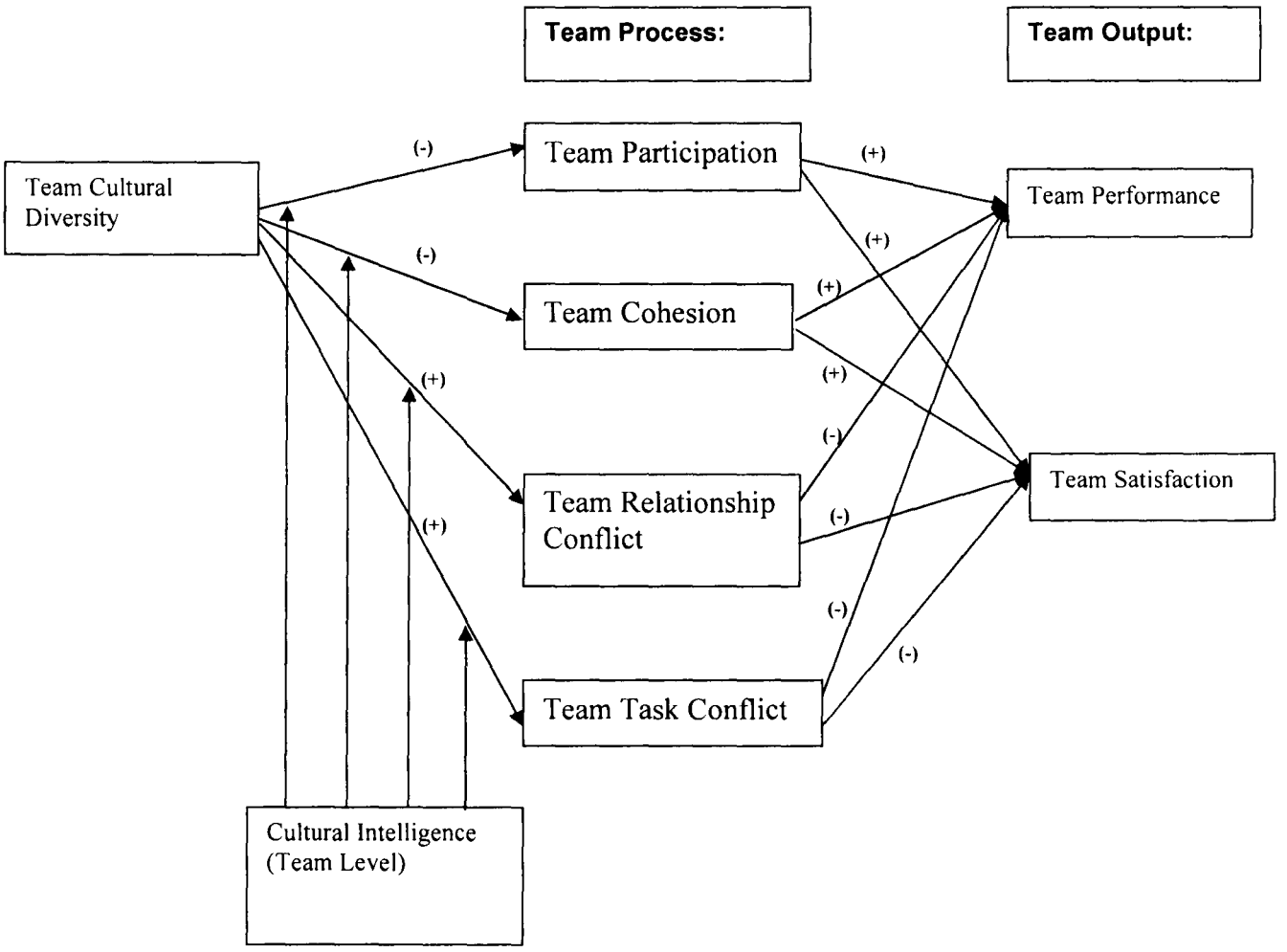


Figure 2: Moderating effect of CQ on Team Diversity (CD) and Team participation

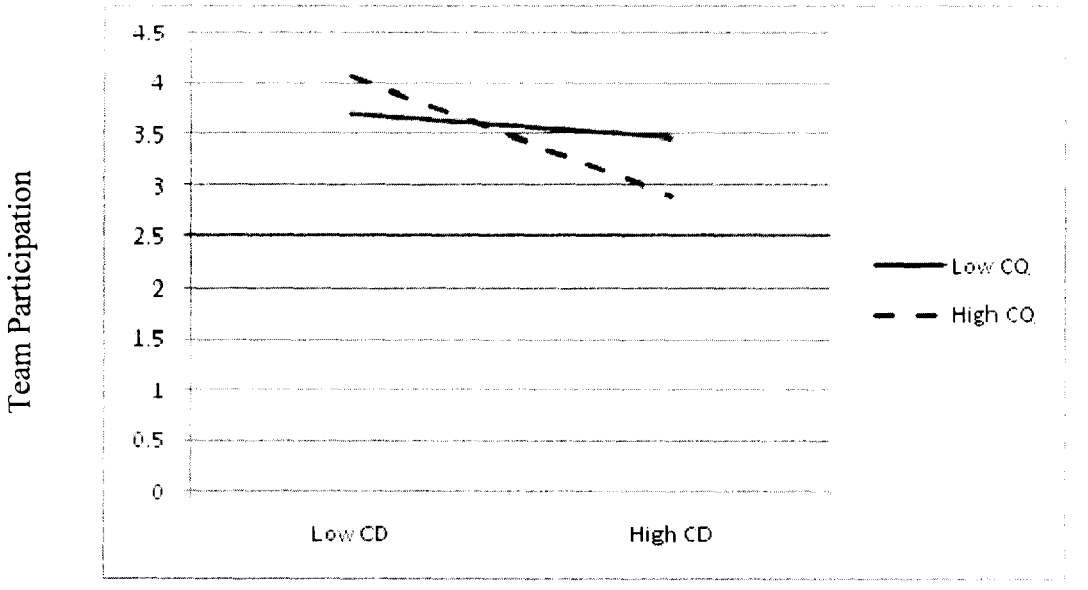


Figure 3: Moderating effect of CQ on Team Diversity (CD) and Cohesion

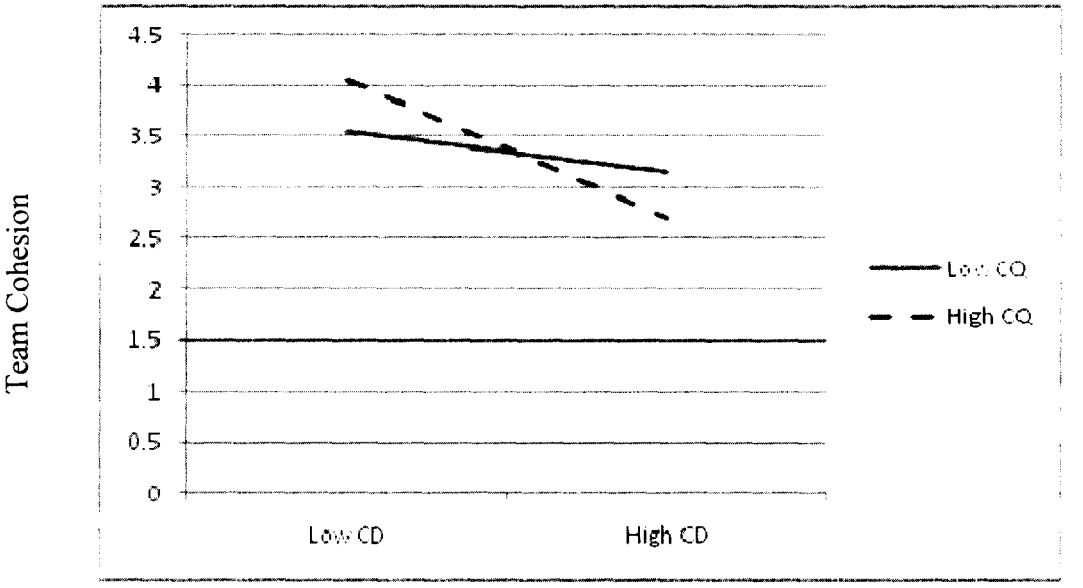
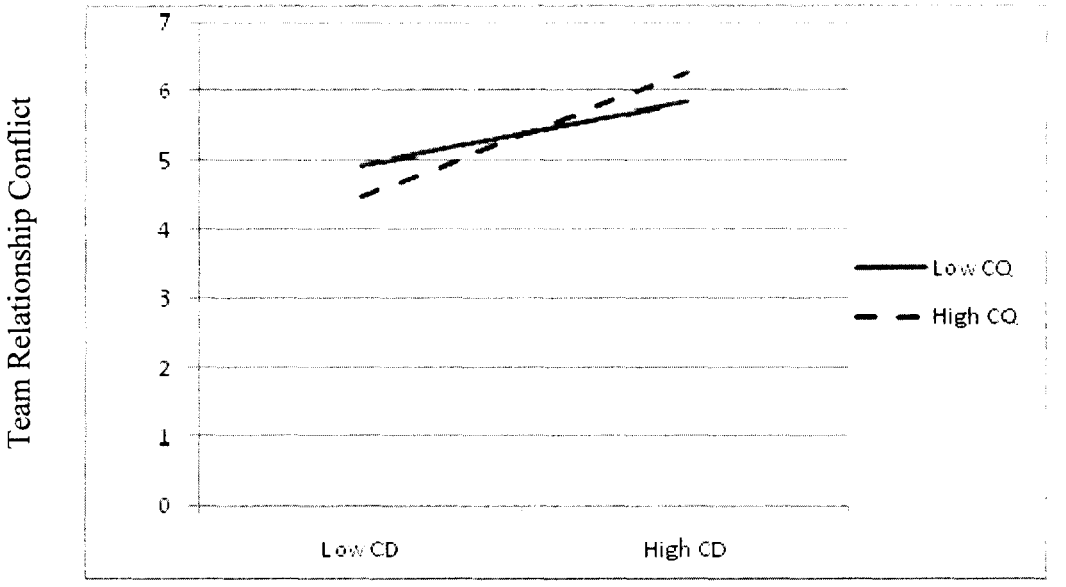


Figure 4: Moderating effect of CQ on Team Diversity (CD) and Relationship Conflict



Appendix C: Survey Items

Phase I: Questionnaires

Please fill in the following information:

Gender:

Age Range: Less than 21 21 to 25 26 to 30 31 to 35 Over 35

Country of Birth:

Years lived in Country of Birth:

Number of countries lived in for more than 6 months:

Please state the reason for staying in each country (e.g. study; work, military; family) and rate how much you feel you have been exposed to that country's culture. (not much 1 2 3 4 5 6 7 Very much)

	Name	**Reason**	**Rating**
Country 1:			1 2 3 4 5 6 7
Country 2:			1 2 3 4 5 6 7
Country 3:			1 2 3 4 5 6 7
Country 4:			1 2 3 4 5 6 7
Country 5:			1 2 3 4 5 6 7

Please name the countries which you most identify with their cultures and feel you are applying their cultural values to your life (it may be up to 3, please sort by strength):

Number of countries visited (living of less than 6 months is considered visiting):
Education Level:
Cumulative GPA:
Number of courses accounted for the GPA:
How Many people are in your team/group for this course:
To best of your knowledge, how many different countries are your team/group members from:
Please name the countries being represented in your team if you know them:

Please rate the following scale Items: (1 = *strong agree, 7 = strong disagree).*

Collectivism Individualism measure:

COL1	I prefer to work in teams rather than working alone.
COL2	Working in teams is better than working alone.
COL3	I wanted to work with teams as opposed to working alone.
COL4	I feel comfortable counting on team members to do their part.
COL5	I am not bothered by the need to rely on team members.
COL6	I feel comfortable trusting team members to handle their tasks.
COL 7	The health of my team is important to me.
COL8	I care about the well-being of my team.
COL9	I am concerned about the needs of those teams.
COL10	I follow the norms of my team.
COL11	I follow the procedures used by my teams.
COL12	I accept the rules of my teams.
COL 13	I care more about the goals of my teams than my own goals.
COL 14	I emphasized the goals of my teams more than my individual goals.
COL 15	Team goals are more important to me than my personal goals.

Measure of CQ:

Meta cognitive CQ
*Cultural Knowledge: Information about cultures other than your own culture.

MC1	I am conscious of the cultural knowledge I use when interacting with people with different cultural backgrounds
MC2	I adjust my cultural knowledge as I interact with people from a culture that is unfamiliar to me

MC3	I am conscious of the cultural knowledge I apply to cross-cultural interactions
MC4	I check the accuracy of my cultural knowledge as I interact with people from different cultures

Cognitive CQ

COG1	I know the legal and economic systems of other cultures
COG2	I know the rules (e.g. vocabulary, grammar) of other cultures
COG3	I know the cultural values and religious beliefs of other cultures
COG4	I know the marriage systems of other cultures
COG5	I know the arts and crafts of other cultures
COG6	I know the rules for expressing nonverbal behaviors of other cultures

Motivational CQ

MOT1	I enjoy interacting with people from different cultures
MOT2	I am confident that I can socialize with locals in a culture that is unfamiliar to me
MOT3	I am sure I can deal with the success of adjusting to a culture that is new to me
MOT4	I enjoy living in cultures that are unfamiliar to me
MOT5	I am confident that I can get accustomed to the shopping conditions in a different culture

Behavioral CQ

BEH1	I change my verbal behavior (e.g. accent, tone) when a cross-cultural interaction requires it
BEH2	I use pause and silence differently to suit different cross-cultural situations
BEH3	I vary the rate of my speaking when a cross-cultural situation requires it
BEH4	I change my nonverbal behavior when a cross-cultural situation requires it
BEH5	I alter my facial expressions when a cross-cultural interaction requires it

Phase II: Questionnaires

Conflict measurement

Relationship Conflict:

RC1	How much friction is there among members in your team?
RC2	How much are personality conflicts evident in your team?
RC3	How much tension is there among members in your team?
RC4	How much emotional conflict is there among members in your team?

Task Conflict:

TC5	How often do people in your team disagree about opinions regarding the work being done?
TC6	How frequently are there conflicts about ideas in your team?
TC7	How much conflict about the work you do is there in your team?
TC8	To what extent are there differences of opinion in your team?

Team Participation:

TP1	Some responded only when asked
TP2	We drifted off the point
TP3	Some took team work too lightly
TP4	Some withheld questions
TP5	Some didn't share good ideas
TP6	Some pretended to be prepared
TP7	Some feared to disagree

Cohesion Measurement:

COH1	Most of the people in the team are not the kind of people I would enjoy spending time with outside team session
COH2	If I were to participate in another team like this one, I would want it to be include people who are very similar to the ones in this team
COH3	There are not many people I like as individuals in this team
COH4	Even if we stopped meeting as a team I would still want to see the people in the team as often as I could
COH5	I wish I had more time for socializing with other teams members

Phase III: Questionnaires

Measure of Team Satisfaction:

SAT1	I am satisfied with my present team members
SAT2	I am pleased with the way my team members and I work together
SAT 3	I am very satisfied with working in this team