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Cultural Intelligence and Collective Efficacy in Virtual Team Effectiveness

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Cultural Intelligence and Collective Efficacy in Virtual Team Effectiveness

By

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Cultural Intelligence and Collective Efficacy in Virtual Team Effectiveness

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This study explores the relationships between cultural intelligence, collective efficacy, and virtual team effectiveness. Data was collected from 110 students at a mid-western university. Participants were randomly selected to be in the same- or diverse-cultural dyad teams, and they are asked to work on a personnel selection task through a computer-mediated communication tool. It was hypothesized that cultural intelligence and collective efficacy would be positively correlated with virtual team performance and satisfaction. Another hypothesis was that collective efficacy would mediate the relationship between cultural intelligence and diverse virtual team performance and satisfaction. It was also hypothesized that the same results would be found for both diverse- and single-cultural teams. Foreign language skill and international traveling experience were expected to link to cultural intelligence. Results revealed that collective efficacy was weakly correlated with decision outcome satisfaction. Overall and meta-cognitive cultural intelligence were correlated with decision outcome satisfaction only in the diverse-cultural teams. Foreign language skill and traveling experience were found to weakly predict cultural intelligence. Implications and future directions are also discussed.

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CHAPTER 1

Introduction

The environment of business organizations has changed significantly over the last decade. The growing economy, the trends of mergers, acquisitions, alliances, global competition, and downsizing, have increased pressure on organizations to locate the best talent around the world and implement teamwork principles to serve organizations' best interests (Kerber & Buono, 2004). As a result, many organizations are embracing globalization. It is now common to see that a product is designed in one country, produced in five countries, and marketed in twenty countries.

Recent advancements in information and communication technologies have also enabled individuals to interact with their work groups remotely and virtually. Consequently, the use of virtual teams is also becoming popular in multinational organizations. "*Virtual team*" refers to a type of work team in which the members are separated by location and time. Team members rely on technology devices to communicate among one another, while working on the interdependent task(s) and the same goal(s) (Levi, 2007).

Consequently, the workplace has become more diverse, with an increasing number of employees who are a part of multicultural teams within an organization. These individuals need to work and interact regularly with those who have a different cultural background (Ang, Dyne, & Koh, 2006). Furthermore, the cross-cultural complexity is not limited to the employees within the organization, but also its customers, suppliers and other stakeholders.

One major advantage of utilizing diverse virtual teams is their ability to bring multiple perspectives to bear on a problem. Diverse virtual teams tend to be more creative, innovative, and effective in understanding diverse needs of a project than the single-cultural teams (Hardin et al., 2007). It also helps the organizations to save cost and time, as well as to make it easier for the organizations to expand their business to another country. However, at the same time, such diverse virtual teams are particularly vulnerable. First, cultural barriers are a major issue, especially as miscommunication (Putnam, 1988) and lack of trust (Handy, 1995; Warkentin, Sayeed, & Hightover, 1997) tend to happen. Subsequently, the members may be reluctant to share their knowledge and/or information with others (Cramton, 2001; Straus & McGrath, 1994). This causes disruption in process, ultimately contributing to poor team effectiveness. Hence, it is not surprising that the probability of failure of any sort of diverse teams is increasing, and unfortunately, the cost of failure is enormous. According to Earley, Ang, and Tan (2006), about 10 to 15 percent of the U.S. expatriates failed to complete their assignments, and a major part of the problem was due to the problem of working with diverse cultures.

Furthermore, teams do not begin to function instantaneously; instead, they need to evolve through a five-step process called forming, storming, norming, performing, and adjourning (Tuckman & Jensen, 1977). A team starts with the forming stage, which the team members get to know each other, the task responsibilities, the goals of the team, etc. At the storming stage, the members may have conflict with the others about the tasks and the team. Then the members move on to the norming stage, which the team becomes more cohesive and the members establish the ground rules and norms for the teams. After that, the team can focus on the task and perform at its peak. The last stage is the

adjourning when the team is dissolved. Diverse virtual teams, in particular, may be taking more time to proceed from one stage to another. However, due to the economic downturn, companies are focusing more on short-term group assignment to help control costs, and the members have to complete the task in a shorter time. This suggests that the capability of an individual to work effectively in the diverse environment is becoming even more critical, as they need to be able to proceed to the performing stage as quickly as possible and start working on the task assigned.

Seeing the importance for organizations to be able to build effective diverse teams, and also as evidenced by the increasing presence of international studies in leading journals (Tsui et al., 2007), the present study is interested in the question "Why is it that some people are able to adjust to new cultures and act appropriately while others struggle, when they are working in a diverse virtual team?" Some research (Brown, 2006) has suggested that cultural intelligence and collective efficacy can help to improve diverse virtual team effectiveness.

Cultural Intelligence

Cultural intelligence (CQ) refers to an individual's capability to be effective in culturally varied situations. In other words, it refers to one's capability to adjust to a new environment and be adaptable and flexible when interacting with individuals from other cultural backgrounds (Ang, Van Dune, & Koh, 2006; Thomas, 2006; Earley & Ang, 2003). This concept is introduced by Earley and Ang (2003), and it is an extension of Gardener's (1993) multiple facets of intelligence and Sternberg and Detterman's (1986) multiple intelligences. There are four facets underneath CQ, which are Meta-cognitive, Cognitive, Motivational, and Behavioral CQ.

Cognitive CQ reflects an individual's knowledge about culture and the structures of a culture, such as the specific norms, values, attitudes, and behaviors (Ang et al., 2006; Ng & Earley, 2006). One can gain such information from education and experience while interacting with people from different cultural backgrounds. In addition to the knowledge of other cultures, the knowledge of self and one's own culture also plays a critical component of CQ. By knowing his/her own culture, the individual will be able to see the differences of another culture and ultimately be able to exhibit more effective intercultural behavior (Thomas et al., 2008).

Merely having knowledge of a culture is not enough; the individuals also need to be able to look beyond the usual stereotypes and superficial descriptions of other cultures (Earley & Ang, 2003). Meta-cognitive CQ is the mental process that individuals use to process and understand culture knowledge (Ang, Van Dyne, & Koh, 2006). Meta-cognitive CQ is a critical component of CQ because 1) it promotes active thinking about people and situations in different cultural settings; 2) it triggers active challenges on stereotypes and assumptions of other cultures; 3) it drives individuals to adapt and revise their strategies so that they are more culturally appropriate and more likely to achieve desired outcomes in cross-cultural encounters (Ang & Van Dyne, 2008); and 4) it makes individuals to suspend judgment until enough information become available (Triandis, 2006). This requires one to have the ability to identify the information that is relevant for making accurate decisions (Elenkov & Maney, 2009), and to be open to different cultural norms and acknowledge that there are multiple 'correct' ways of doing something. Consequently, it requires one to overcome ethnocentrism, which is the thinking that what is normal in their culture is or should be normal everywhere else. Individuals will need to

get exposed to different cultural norms and place themselves in the shoes of people from other cultures in order to develop this skill (Triandis, 2006).

Motivational CQ refers to an individual's drive to learn more about and function effectively in different cultural settings (Ang, Dyne, & Koh, 2006). A person's Motivational CQ is related to self-efficacy and cultural values. It is important for the individual to be confident that they have the capability to adapt to the new culture. This is because early encounters with people from another culture often lead to mistakes and possible embarrassment. People lacking confidence are less likely to reengage under such negative feedback. Besides, incongruence of personal and other cultural values may also lead to low motivation (Earley & Mosakowski, 2004).

Behavioral CQ reflects the action component of CQ, which is the capability to exhibit appropriate verbal and nonverbal actions as well as the capability to inhibit displaying inappropriate behaviors (Ang et al., 2006; Ng & Earley, 2006; Thomas, 2006). This is important because an individual may have the knowledge and energy to interact with people from diverse backgrounds, but if he/she is unable to translate the intention into action, he/she will still fail in the interaction (Earley & Mosakowski, 2004).

CQ versus Other Similar Constructs. There are several constructs that are similar to cultural intelligence, and one of them is global mindset. Global mindset is a popular construct that is widely used in management literature. Global mindset is similar to CQ, in that it is also assessing the capability of a manager to be effective in cross-cultural settings. It differs from CQ because global mindset focuses only on the manager and on the cognitive aspect (Bowen & Inkpen, 2009).

Because CQ is grounded in the theory of multiple intelligences (Sternberg and Detterman, 1986), CQ is similar to, yet distinct from, other forms of intelligence, such as emotional and social intelligences. This is because CQ specifically addresses the concept of culture and one's general set of capabilities of adapting and behaving in situations with cultural diversity. On the other hand, emotional and social intelligences focus on an individual's success in a setting that remains relatively unchanging (Earley & Mosakowski, 2004).

There is also some evidence that CQ differs from general cognitive ability. A study conducted by Ward et al. (2009) demonstrated that CQ is not correlated with Raven's Advanced Progressive Matrices (RAPM); and Ang et al. (2008) also found that CQ is not correlated with Wonderlic Personnel Test.

Collective Efficacy

Another factor that may help researchers more precisely understand how cultural diversity may be related to virtual team effectiveness is collective efficacy. Collective efficacy refers to an individual's belief in his or her team's capability to mobilize the motivation, cognitive resources and courses of action needed to successfully perform a specific task (Katz-Navon & Erez, 2005; Jung & Sosik, 2003; Baker, 2001).

This is similar to Bandura's (1997) concept of self-efficacy, which refers to an individual's belief in his/her own capability to perform a particular task. However, collective efficacy requires that individuals shift their focus, or reference, from the individual level to the team level. Research (Baker, 2001; Bandura, 1997; Hardin et al., 2007) has suggested using self-efficacy assessment for tasks requiring the independent efforts of team members, and using collective efficacy assessment for tasks requiring the

interdependent efforts of team members.

Group potency is another construct that is often used in team-related research. Although group potency and collective efficacy are sometimes used interchangeably, there are important differences in their definitions. Group potency is defined as a group's collective belief that it can be effective (Hardin et al., 2007). Another distinction that is typically (though not always) made between group potency and collective efficacy is that group potency refers to a belief about the group's overall effectiveness, and collective efficacy is frequently defined in terms of a specific task (Baker, 2001).

Team Outcomes

In this study, the virtual team effectiveness included not only the team performance, but also the two types of team member satisfaction, process satisfaction and decision outcome satisfaction. Team performance was reflected by the accuracy of the team decision outcome. Decision outcome satisfaction reflected team members' satisfaction with their team's performance. Process satisfaction assessed the extent to which team members felt satisfied with the team's approach and experiences during the team discussion.

Present Study

The present study examines the effect of CQ and collective efficacy in virtual team effectiveness. Specifically, the present study examines the extent to which collective efficacy mediates the relationship between CQ and virtual team effectiveness. The antecedents of CQ are also examined. Furthermore, the inclusion of same-cultural virtual team provides a means to compare the effect of CQ in a medium that has not been considered in previous CQ research. The proposed model is presented in Figure 1.

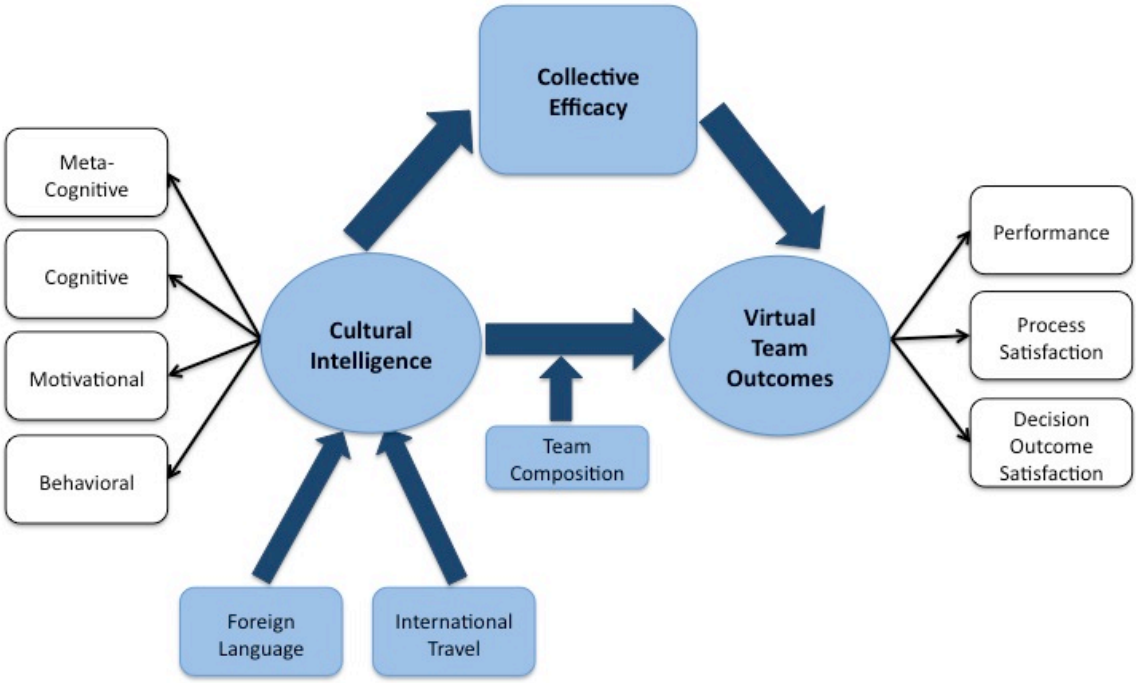

Figure 1. Proposed model of cultural intelligence, collective efficacy and virtual team effectiveness.

Cultural Intelligence and Virtual Team Effectiveness. Earley (2002) suggests that individuals with high CQ are valuable to multinational teams in that they reduce many of the negative features of these types of teams such as interpersonal conflict. Specifically, individuals with high CQ are more likely to react appropriately and fully understand culturally sensitive situations. In multinational teams, members who have high cultural intelligence are able to determine other member's preferred interaction styles and comprehend each member's behaviors and intentions (Ang et al., 2006). They are also likely to continuously work to overcome conflicts that are typically experienced in diverse teams despite previous failures or adversity (Earley, 2002).

Over a series of studies, the researchers reported that cultural intelligence predicted multinational task performance, cultural judgment and decision-making task performance, general adjustment, cultural adjustment (Ang et al., 2007), expatriate

effectiveness (Kim, Kirkman, & Chen, 2008; Templer, Tay, & Chandrasekar, 2006), intercultural training (Earley & Peterson, 2004), and multicultural teams (Earley & Mosakowski, 2004; Rockstuhl & Ng, 2008).

Hypothesis 1: CQ will positively relate to virtual team performance and satisfaction.

Collective Efficacy and Virtual Team Effectiveness. Collective efficacy has been shown to influence team performance (e.g. Katz-Navon & Erez, 2005) and virtual team performance (Whiteoak et al., 2004; Hardin et al., 2007). This is because collective efficacy influences how much effort the team members will put into a task and their persistence when group efforts fail to produce results, and hence, influences the team performance (Bandura, 1997).

Hypothesis 2a:Collective efficacy will positively relate to virtual team performance and satisfaction.

Cultural Intelligence and Collective Efficacy. Brown (2006) found that cultural intelligence relates to collective efficacy in multinational teams. It is expected people who are culturally intelligent are more likely to interact with team members with a different cultural background in an appropriate and effective way, which, in turn, would make them more confident in their team's ability to perform well. It is also possible that team members with high cultural intelligence will have more initial confidence in the capabilities of the team members who have a different cultural background than team members with low cultural intelligence, which, again, would result in a greater level of collective efficacy.

Hypothesis 2b: Cultural intelligence will positively relate to collective efficacy.

It is commonly believed that cultural intelligence is directly related to virtual team performance. However, considering both CQ and collective efficacy are found to predict team task performance, collective efficacy may also mediate the relationship between CQ and virtual team performance. Thus far, there was only one study done to examine this relationship. Brown (2006) conducted a study to examine the mediation effect of collective efficacy on CQ and the intention to perform in multinational dispersed teams. Collective efficacy was found to serve as partial mediator and decreased the beta weight of CQ when it was regressed onto the intention to perform. However, this study did not require the participants to actually perform the task. Hence, to further investigate the relationship of cultural intelligence, collective efficacy, and virtual team outcomes, for the current study, it is hypothesized that

Hypothesis 2c: Collective efficacy will mediate the relationship between CQ and team performance and satisfaction.

Diverse- versus single-cultural teams. Although CQ seems to have roots in national cultural differences, its reach is much more expansive. According to Earley et al. (2006), culture operates at a variety of levels: national, organizational, team and personal. Personal culture means that each individual is unique with their individual experiences, and the culture will help shape the way they view things about the world and behave in the certain way. Consequently, we differ not only across national boundaries, but also across regions, industry sectors, organizations, professions and personal backgrounds. The Northern and Southern Americans view each other as different in values and beliefs, reflecting a within-country difference. Despite coming from the same national culture,

regions within a country often reflect distinctive subcultures (Earley & Mosakowski, 2004).

Thus far, all previous CQ studies have focused on how CQ is beneficial for the teams that are diverse in the national cultures. Hence, the present study will examine if the same effect of CQ on diverse virtual teams could be applied to the individuals working on same-culture virtual teams.

Hypothesis 3a: CQ will positively relate to virtual team performance and satisfaction, for both local and diverse virtual teams.

Hypothesis 3b:Collective efficacy will mediate the relationship between cultural intelligence and team performance and satisfaction, for both local and diverse virtual teams.

Antecedents of Cultural Intelligence. If cultural intelligence will influence one's collective efficacy when working in a multicultural group, and ultimately, the task performance, it is important to understand the antecedents of cultural intelligence. Specifically, since cultural intelligence is conceptualized as more state-like than trait-like, there are ways for one to develop and grow his/her CQ over time.

Studies (Brown, 2006; Crowne, 2008; Shannon & Begley, 2008) have suggested that one can become familiar with other cultures and improve his/her cultural intelligence through several means, such as travelling, studying abroad, working abroad, living in a foreign country, interacting with people from other cultures, knowing more than one language, etc. In addition, several studies have demonstrated that one's CQ levels could be improved by having them to work virtually with people from other cultures on a

project for an extended period of time (Moynihan, Peterson, and Earley, 2006; Shokef & Erez, 2008).

It has been suggested that cultural intelligence can be improved through increased contact with individuals from other cultures (Ng & Earley, 2006). This is called the contact hypothesis; it suggests that increased contact will reduce the use of stereotypes because uncertainties about the other culture will be reduced and replaced with accurate information. International experiences, especially for employment and study, will allow individuals to obtain knowledge, skills, and behaviors that are essential for living and working in different cultural environments, such as intercultural communication skills, increased adaptability, and flexibility in volatile environments (Shannon & Begley, 2008).

Crowne (2008) found that individuals who studied abroad had a higher level of overall CQ, as well as all four facets of CQ. The experience of employment abroad also appeared to improve one's overall CQ and mega-cognitive CQ. On the other hand, Shannon and Begley (2008) found that employment abroad positively related to motivational CQ and overall CQ.

Specifically, Crowne (2008) suggested that not only the type of exposure, but also the depth of the exposure, such as the frequency and the length of the international experiences, would influence one's level of CQ. In his study, it was found that the number of countries visited for any reasons, was consistently and positively correlated with the level of one's CQ. These findings were further supported by the study conducted by Tarique and Takeuchi (2007). They found that the number of international non-work experiences were associated with all four facets of CQ. In addition, the length of such

experiences moderated the relationship between number of experiences and meta-cognitive and motivational CQ.

Hence, in line with the research, I predict that

Hypothesis 4a: The depth of international traveling experiences (comprises of the number of length of the travel), for any purposes, will positively relate to overall and facets of CQ.

Language skills are believed to be another important antecedent of cultural intelligence. Language skills refer to the extent to which individuals can speak easily and accurately in the language that cross-cultural interactions require. Language skills serve as a fundamental instrument in acquiring cultural knowledge, such as understanding of economic, legal, and social systems of different cultures. Earley (2002) argues that individuals who lack an aptitude for acquiring languages, at least at some reasonable level of proficiency should have lower CQ. Research on language skills in multinational organizations also indicates that limited language comprehension and fluency may create a sense of remoteness and disconnectedness (Marschan-Piekkari, Welch, & Welch, 1999).

However, there was only one study thus far that examined the relationship between language skills and CQ. Shannon and Begley (2008) found that language acquisition related to cognitive CQ and overall CQ. Thus, for my final hypothesis, I propose that

Hypothesis 4b:The number and proficiency level of language(s) one can speak will positively relate to the overall CQ.

CHAPTER II

Method

Participants

Participants were students at a medium-sized Midwestern University in the United States. Participants received extra credit points in psychology and business courses for their participation in this study. There were 110 participants in the final data, with 24 diverse-cultural teams and 31 same-single-cultural teams. Participants in this study were found to be predominately 18-26 years old (94.3%) with the remaining portion of the sample reportedly between the ages of 27-38. The sex of the sample was 53.8% of female and 46.2% of male. Caucasian/White (60.4%) made up the majority of the participants, followed by Asian (23.6%), African American/Black (4.7%), Hispanic (2.8%), and other ethnicities (8.5%).

Procedure

When participants signed up for the study, they were randomly selected to work with another team member, either from the same culture or from different culture. They were told that the purpose of the study was to examine college students' ability to work on a virtual team environment. When participants showed up at the research lab, they were seated at a research station and each station was equipped with a computer that was set up with the appropriate communication technology. Participants were first asked to sign an informed consent form, and then they were asked to complete a set of questionnaires assessing their demographics and cultural intelligence. Participants were then given general description of the task that they would be completing, including their

role and their partner's role in the task. Next, they were given five minutes to socialize with their partner and complete the collective efficacy question before working on the task.

For the task, they were asked to assume the role of human resources (HR) manager at an airline company. They had to make a personnel decision on which candidate, out of four, should be hired as pilot for international flights. The characteristics of the four candidates provided to the participants were modeled after materials used in prior research (Heuser, 2009; Schulz-Hardt, Brodbeck, Mojzisch, Kerschreiter, & Frey, 2006). Participants were also provided with candidate evaluation tool to help them make the decision. After selecting the candidate individually, participants then worked with a partner, who was also playing the role of an HR manager and tried to reach an agreement on which candidate should be hired for the international flights. Upon completion of the task, participants were asked to complete a few questionnaires: Communication, Process Satisfaction, and Decision Outcome Satisfaction, and the manipulation check. The procedure of this study is summarized in Figure 2.

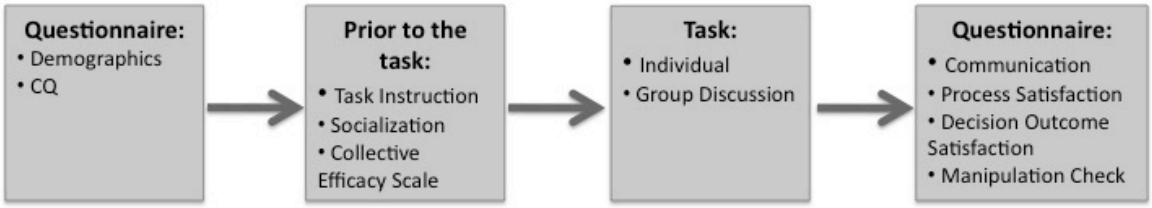

Figure 2. Study Procedure

Measures

Demographics. To better understand who participated in this study, several demographic variables were collected: age, gender, year in college, ethnic background,

country of citizenship, level of English proficiency, previous international experience, willingness to working with others, and familiarity with computer-mediated interaction. The demographic items can be viewed in Appendix A.

Cultural Intelligence (CQ). The Cultural Intelligence Scale (CIS; Ang, Van Dyne, Koh, Ng, Templer, Tay, & Chandrasekar, 2007) was used to assess cultural intelligence. CIS was the only available assessment of CQ to date. This scale consisted of 20 items that could be broken down into four subscales: meta-cognitive (four items, α =.72), cognitive (six items, α = .86), behavioral (five items, α = .83), and motivational (five items, α = .76). The Cronbach alphas for each subscale were reported by Ang et al (2007). Examples of items include: "I am conscious of the cultural knowledge I use when I am interacting with people with different cultural backgrounds" (Meta-cognitive), "I know the legal and economic systems of other cultures" (Cognitive), "I enjoy interacting with people from different cultures" (Behavioral), and "I am confident that I can get accustomed to the shopping conditions in a different culture" (Motivational). A seven-point scale ranging from 1 (strongly disagree) to 7 (strongly agree) was used to score the items. The full sample of items can be viewed in Appendix B.

Collective Efficacy. The participants were asked to rate his/her team member's ability to perform the specific tasks and his/her level of confidence in his/her answer (on a scale from 1 not confident at all to 10 very confident). The items were modified based on the scale developed by Bandura (2001) to fit into the current study, and many collective efficacy studies (Katz-Navon & Erez, 2005; Gibson, Randell, and Earley, 2000) have followed the same format. Please see Appendix C for the items.

Decision-making Task. The task was a highly interdependent personnel selection task that was adapted from Heuser (2009) and Schulz-Hardt et al (2006). This task was also called hidden profile task because each team member received slightly different information about the four candidates. Hence, the team had to work cooperatively in order to make the best decision. An example of a positive attribute "is able to assess weather conditions very well." An example of a negative attribute "is regarded as not very cooperative." In the full information set, each of the candidates was characterized by 9 or 10 attributes that were either positive or negative. In the full information set, Candidate C was the best choice. This candidate (C) had seven positive and three negative attributes, whereas the other candidates (A, B, and D) had four positive and five or six negative attributes. The reasons given by participants for selecting the particular candidate were used as indicator for team performance. The profile can be viewed in Appendix D.

Team Performance. Team performance was objectively determined from the team's decision outcome, which was dichotomously coded, where 1 represents the choice of best candidate and 0 represents choice of other candidates.

Communication. The overall quality of the team communications process was assessed through three items that were developed by Gibson and Vermeulen (2003). The scale is reported to have Cronbach alpha of .89 (Gibson & Vermeulen, 2003). A seven-point scale ranging from 1 (strongly disagree) to 7 (strongly agree) was used to score the items. An example of the items is "During the exercise, group members maintained a high level of idea exchange." Please see Appendix E for the items.

Process Satisfaction. Participants were asked to indicate the extent to which they felt satisfied with the team processes and approaches during the discussion. The scale was developed by Green and Taber (1980) and consists of five items (α = .88). Please refer to Appendix F for the items.

Decision Outcome Satisfaction. This was to assess the extent to which participants were satisfied with their team's overall performance and decision outcome. The scale was developed by Green and Taber (1980) and consisted of five items (α = .88). A seven-point scale ranging from 1 (strongly disagree) to 7 (strongly agree) was used to score the items. An example of the items is "To what extent are you confident that the group decision is correct?" Please refer to Appendix G for the items.

Manipulation check. As a manipulation check, a perceived similarity questionnaire (Clark, Ostroff, & Atwater, 2002) asked participants if they viewed their partner as similar to them in terms of race, geographic origin, sense of humor, personality, etc. This questionnaire can be viewed in Appendix H.

CHAPTER III

Results

Prior to testing the hypotheses, data were cleaned and checked for errors. Next, a factor analysis was conducted on the items of CQ and four factors were extracted, with all of the items were correctly identified in the factors. All four facets of CQ were found to correlate strongly among one another (*rs* ranging from .59 to .86, $p < .0001$). The overall model was found to be highly reliable ($\alpha = .91$), which was consistent with the findings of previous studies (Ang et al., 2007; Ward, 2009).

Because participants were randomly assigned to partner with another participant, either from the same or a different culture, to work on the task, a frequency analysis using manipulation check items was run to verify if the manipulation worked. For the single-cultural teams, the majority of the participants (74.1%) correctly perceived their partners to be similar to them in terms of the geographic origin. However, 13.8% of the participants reported unsure, and 12.1% of them perceived their partners to be highly or somewhat dissimilar to them. For the diverse-cultural teams, half of the participants correctly perceived their partner to be dissimilar to them, however, 18.8% of them reported unsure and 31.3% of the participants incorrectly perceived their partners to be highly or somewhat similar to them. This finding is of concern, particularly for the participants in the diverse cultural teams, because they did not realize that they were working with a person from a different culture, and hence, the manipulation was not completely effective. The implications of this finding are further described in the discussion.

To test Hypothesis 1, correlation analysis examined whether overall CQ would relate to three virtual team outcomes (i.e., performance, process satisfaction and decision outcome satisfaction). Process satisfaction appeared to correlate positively with both decision outcome satisfaction ($r = .42$, $p < .0001$) and performance ($r = .21$, $p < .05$). However, overall CQ was not correlated with any of the team outcomes. Another correlation analysis was conducted with the four facets of CQ and the three outcomes. The same results were found for the facets of the CQ. Please refer to Table 1 for the correlation coefficients.

To test hypothesis 2a, which predicted a positive relationship between collective efficacy and virtual team outcomes, additional correlational analyses were conducted. Results indicate a weak, positive relationship between collective efficacy and decision outcome satisfaction ($r = .20$, $p < .05$).

Hypothesis 2b predicted that cultural intelligence would positively relate to collective efficacy. Results found neither overall CQ nor the facets of CQ were related to collective efficacy, suggesting that CQ and collective efficacy are unrelated constructs. Subsequently, hypothesis 2c, that collective efficacy would mediate the relationship between CQ and virtual team outcomes, was rejected, as this first step in mediation (H2b) was not supported.

When the data were further analyzed by comparing diverse-cultural teams with single-cultural team (i.e., Hypothesis 3), some interesting results were found. Participants in the diverse-cultural teams reported significantly higher overall CQ scores and higher scores on every facet of CQ, compared to participants in the single-cultural teams (all $p < .01$). These results were consistent in single-culture teams, even when the team members

were both international students, who might be expected to have higher CQ, when compared to local students. Conversely, participants in the single-cultural teams had better team performance and process satisfaction than participants in the diverse-cultural teams (all $p < .05$). Please refer to Table 4 for the mean scores.

Given these findings for Hypothesis 3, Hypotheses 1 and 2 were re-examined by splitting the data into single- and diverse-cultural teams. For participants in the diverse-cultural teams, meta-cognitive CQ ($r = .42$, $p < .005$) was found to be positively related to decision outcome satisfaction; however, these relationships disappeared in the single-cultural teams. This suggests a possible moderation effect of team composition on the relationship between CQ and decision outcome satisfaction, which provides partial support for hypothesis 1.

Several moderated multiple regression analyses were then conducted to further test this moderation. All facets of CQ were centered to create the interaction term. For the overall CQ, the model significantly predicted decision outcome satisfaction, $F(3, 97) = 2.90$, $p < .05$, $R^2 = .09$. There was a significant main effect of team composition ($\beta = .23$, $p < .05$) and interaction effect of team composition and overall CQ composition ($\beta = -.22$, $p < .05$) on decision outcome satisfaction. The same results were also found for the meta-cognitive CQ. The model significantly predicted decision outcome satisfaction, $F(3, 104) = 5.58$, $p < .005$, $R^2 = .14$. There was a significant main effect of team composition ($\beta = .22$, $p < .05$) as well as a significant interaction effect of team composition and meta-cognitive CQ ($\beta = -.31$, $p < .005$) on decision outcome satisfaction. Figure 3 and 4 illustrate that the relationships between overall and meta-cognitive CQ and decision outcome satisfaction are moderated by team composition.

Hypotheses 2a through 2c were also examined considering team composition. Analyses were conducted and results indicate none of the relationships between collective efficacy and team outcomes were significant.

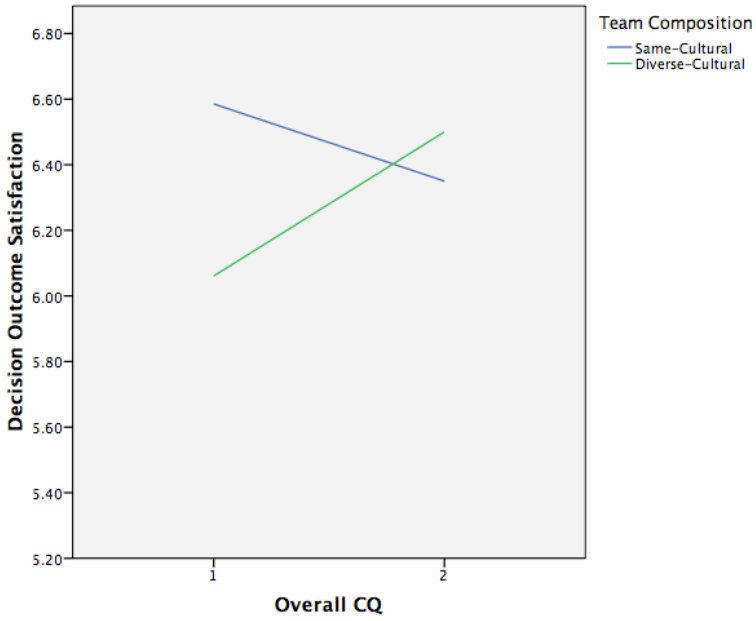

Figure 3. Moderation Effect on Overall CQ

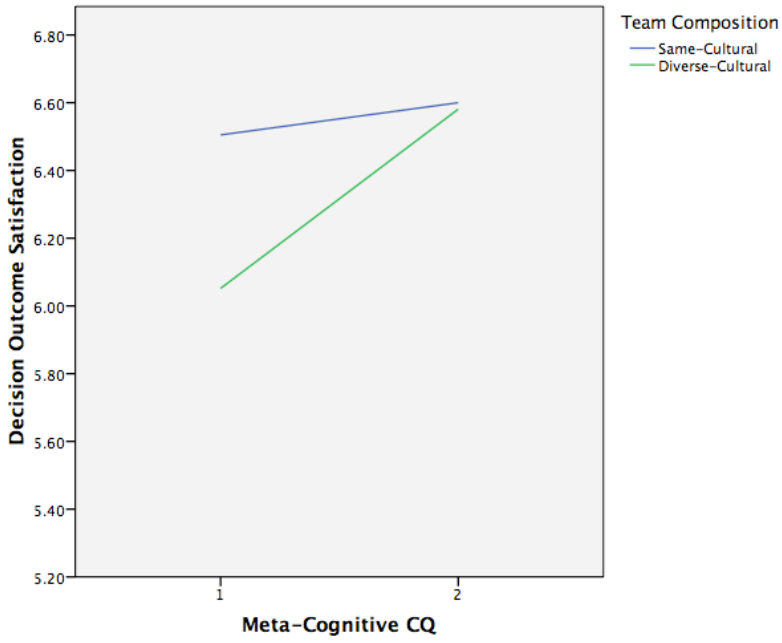

Figure 4. Moderation Effect on Meta-Cognitive CQ

Hypothesis 4 predicted that foreign language and the depth of traveling are two important antecedents of CQ. Foreign language skill was calculated by adding the proficiency levels of each foreign language one speaks. The international traveling experience was recorded, with a score of 1 representing a short vacation from 1 day to 1 week; a score of 2 representing a range from 8 days to 1 month, and a score of 3 representing staying in a foreign country for more than a month. The depth of the traveling experience was calculated by adding the number of countries visited with the duration scale.

The findings revealed that both foreign language skill and the depth of international traveling were correlated significantly with overall, meta-cognitive, cognitive, and motivational CQ. Foreign language and international traveling experience were then regressed onto each component of CQ using simple linear regression to find out which one is a more important predictor. Foreign language skill significantly predicted cognitive CQ ($\beta = .24$, $p < .05$). On the other hand, international traveling experience significantly predicted motivational CQ ($\beta = .3$, $p < .05$). These results showed that hypothesis 4 was supported. Please refer to Table 5 for the regression coefficients.

A final research question was analyzed to examine communication between team members and how this influenced outcome variables. The findings revealed that communication was a significant predictor of members' satisfaction with the team process ($r = .37$, $p < .0001$) and decision outcome ($r = .45$, $p < .0001$). There was also a positive relationship between communication and collective efficacy ($r = .34$, $p < .005$). When CQ, collective efficacy, and communication were regressed onto the virtual team

outcomes, communication appeared to be the only important predictor for process and decision outcome satisfaction.

CHAPTER IV

Discussion

The use of virtual teams has become a common practice in many contemporary organizations. Organizational and management research, however, has not adequately addressed the factors that potentially influence virtual team effectiveness. Furthermore, the construct of cultural intelligence emerged few years ago and has quickly gained much attention on its effect on multinational teams. This study examined the influence cultural intelligence and collective efficacy had on virtual team effectiveness, namely performance, process satisfaction and decision outcome satisfaction.

This study fails to find conclusive evidence that any factors examined in this study (communication, cultural intelligence, and collective efficacy) were predictive of virtual team performance. This suggests the need for additional research and the need to revise the task assigned to the participants. The duration of five minutes for the socialization and 30 minutes for the discussion probably restricted many team-based factors that might influence the participants in this study.

Nonetheless, findings indicate that overall and meta-cognitive CQ were positively related to decision outcome satisfaction, but only in the diverse-cultural teams. This suggests that cultural intelligence might only have positive influence on the diverse teams. This finding supports the tendency that virtually all of the previous research (An et al., 2006; Thomas, 2006; Earley & Ang, 2003) was focusing on examining the effect of cultural intelligence on multinational and/or diverse teams. Collective efficacy was also found to weakly correlate with decision outcome satisfaction. This study also found that a

small portion of participants in the diverse-cultural teams did not uncover the cultural differences of their partners. It implies the manipulation of this study did not work for these participants, and it might limit the findings of this study. However, it was consistent with Cramton's (2001) study that people in the dispersed teams were facing the problems of discovering and sharing information about the context differences and constraints, such as culture, time and location, that existed in the teams. It then resulted in confusion, lack of coordination and trust, and subsequently, poorer performance.

Interestingly, communication appeared to significantly predict both process and decision outcome satisfactions. Furthermore, among the three predictors (cultural intelligence, collective efficacy, and communication), communication appeared to be the only significant predictor of both types of satisfaction. These findings are consistent with existing empirical research on teams. For instance, Cannon-Bowers et al. (1995) proposed a model of team effectiveness, and they emphasized that communication, as a team process, is one of the most critical team characteristics and competencies that is required for successful team performance. Several studies (Franz et al., 1990; Morgan et al., 1986; Foushee, 1982) have also consistently identified communication as one of the essential teamwork skills needed to build an effective team. Hence, it makes sense that communication, which is an important team input and process, is related to both process satisfaction and decision outcome satisfaction.

There are several implications of these findings for virtual team effectiveness. For example, some teams in the current study did not uncover the fact that members held different information about the job candidates, while some teams uncovered it too late to make the accurate decision. This suggests a need to train team members how to

communicate and exchange information in effective and efficient ways. This is especially critical for virtual teams because the physical distance and other situational constraints hinder team members' ability to communicate and comprehend the messages correctly. Empirical research supports this finding. For example, previous research (Keller & Holland, 1983; Monge & Kirste, 1980) has found that dispersed team members tend to communicate and exchange information less with each other than members within the collocated teams. Cramton (2001) also found that people in the dispersed teams were still facing the problem of exchanging information and gaining mutual understanding, even the computer-mediated communication and technologies have improved significantly compared to the situation in the 1980's. Additional research conducted by Straus and McGrath (1994) found that, as the task complexity increases, people in virtual teams perform less effectively than people in face-to-face teams. They suggest that the poor productivity is due to the slower rate people tend to operate in a computer-mediated environment.

Previous studies (Guo et al., 2009; Staples & Webster, 2007; Watson, 2008; Webster & Wong, 2008) have primarily focused on the comparison between face-to-face teams and virtual teams; however, the current study takes a step ahead and examines the differences between single- and diverse-cultural virtual teams. Given the diversity in today's workplace, it is very common to find virtual teams that are composed of members with diverse backgrounds, even though they might be within the same country. However, little existing literature has examined this cultural perspective in virtual teams. The finding in this study that single-cultural virtual teams have better performance and members' satisfaction than diverse-cultural virtual teams suggests that diverse teams

present even more challenges to the corporate management to ensure their effectiveness than the single-cultural teams. Therefore, the selection of appropriate members is crucial. The members should be motivated, have both technical and cross-cultural competencies, and have the ability and willingness to compromise. Managers should consider having members meet with each other via a video-conferencing tool, particularly if a face-to-face meeting is not feasible. Doing this when the teams are first formed can be extremely helpful to build interpersonal relationships among team members (Zakaria et al., 2008). In this way, leaders play an important role in promoting effectiveness for diverse virtual teams. Leaders should make sure there are sufficient communication and technology resources and support for the team members, and encourage them to have regular scheduled meeting and interact with each other frequently (Zakaria et al., 2008).

The finding in this study that overall and meta-cognitive CQ were related with decision outcome satisfaction in the diverse-cultural teams but not the single-cultural teams, suggests that organizations could consider the factor of cultural intelligence in their virtual teams when the team members are diverse. Organizations should consider this factor during the selection process (i.e., selecting individuals with higher CQ) and for development purposes (i.e., sending employees to other countries as expatriates). Organizations could also incorporate a similar hidden profile task in their training program. By having employees engaged in this task, it will make them come to realization of the importance of communicating effectively and exchanging information actively, as well as the differences between team members.

Limitations and Future Directions

There are several limitations in the current study. First, the teams were under pressure to come to a decision quickly. They had only approximately 30 minutes to discuss and exchange information, and hence, decision may have been premature. There also may not have been enough time for team processes to unfold. In a typical business setting, virtual team members will have more time to work together, reach a decision, and complete their projects. The time limit has also restricted the participants to get to know enough about their partners, and consequently, there is a portion of the participants who were in the diverse-cultural teams did not find out that they were working with an individual with a different cultural background. Besides, the time pressure has also limited the influence of cultural intelligence and collective efficacy on the team performance. Previous studies (e.g., Ang et al., 2007; Hardin et al., 2007) have focused on the teams with a bigger assignment that requires the members to work together for a few months.

Another limitation is that the decision outcome held no implications for participants personally. As such, their decision outcome satisfaction may not be a completely relevant or strong criterion measure. Unlike an actual work environment, where compensation or promotion may be a factor, for these participants reward was based solely on their participation in the research study and not tied to performance or quality of the decision reached and therefore held no inherent motivational potential.

The use of international students to form the diverse-cultural teams can be problematic too. Many international students may have already stayed in United States for several years and have adopted the culture of this country. This is another possible

reason that a portion of the participants did not recognize the cultural differences in the diverse-cultural teams. Furthermore, the small sample size of the teams in current study may also have reduced the likelihood of finding statistically significant results. A small effect may go undetected.

Future studies should further examine the relationships between cultural intelligence, collective efficacy, and communication on the diverse virtual team effectiveness. Considering the prominence of culturally diverse virtual teams, there is not much research so far on examining the factors influencing its effectiveness. Furthermore, cultural intelligence is a relatively new construct, and more research is needed to further explore the usefulness of this construct on diverse virtual teams. Previous studies (Ang et al., 2007; Kim et al., 2008; Templer et al., 2006; Rockstuhl & Ng, 2008) have focused on how cultural intelligence can improve cultural and general adaptation, multinational team performance, and virtual team performance. Future research should examine the effect of cultural intelligence on other team processes and outcomes, such as members' motivation, satisfaction, and team cohesion.

Future studies should reexamine the model of the current study with the following: (1) create a task for the teams that the members will be responsible for the outcomes of the task, such as utilizing a class assignment for the research; (2) create the task that requires the members to spend a considerable period of time with each other; (3) recruiting participants in two or more countries, instead of the local and international students in one country, to form the diverse-cultural teams.

It is also recommended that future research examine the model using teams of more than two individuals and create different roles for each individual. In an

organization, teams tend to be more complicated and involve more than two individuals. The role of each individual is also different.

Conclusion

In sum, the results of this study provide additional empirical support that communication is an important predictor of virtual team effectiveness. Organizations should focus on providing training and support to team members on communication in order to have a more effective virtual team. Cultural intelligence is related to virtual team outcome, but only when the team members have diverse cultural backgrounds. Previous research has explored whether cultural intelligence can improve the performance of multinational and virtual teams with members working together for an extended period of time. This research extends previous findings and provide preliminary empirical evidence that cultural intelligence can improve not only the performance of the multinational and virtual teams, but also many improve other desired team outcomes such as satisfaction. There is also a need to continue to explore the influence of cultural intelligence on the short-term assignment teams in future research.

Table 1. Descriptive Statistics and Correlations.

Variable	M	SD	1	2	3	4	5	6	7	8	9	10
1. Overall CQ	4.74	0.81	(.91)									
2. Meta-Cognitive CQ	5.31	0.95	.73**	(.82)								
3. Cognitive CQ	3.87	1.09	.76**	.39**	(.86)							
4. Motivational CQ	5.18	1.01	.81**	.51**	.49**	(.85)						
5. Behavioral CQ	4.80	1.11	.76**	.52**	.32**	.52**	(.88)					
6. Collective Efficacy	17.42	2.69	.02	.14	-.09	.07	-.03	(.90)				
7. Communication	6.38	0.82	.00	-.00	.01	-.00	-.01	.34**	(.86)			
8. Performance	0.62	0.49	-.12	.00	-.19	-.13	.04	.14	.12	---		
9. Process Satisfaction	6.03	0.93	-.16	-.05	-.16	-.14	-.09	.14	.37**	.04	(.80)	
10. Decision Outcome Satisfaction	6.42	0.69	-.01	.08	-.04	-.04	-.02	.20*	.45**	.21*	.42**	(.89)

Note: N=106

** p < .05*

*** p < .01*

Table 2. Descriptive Statistics and Correlations between Foreign Language, Traveling, and Cultural Intelligence.

Variable	M	SD	Overall CQ	Meta-Cognitive CQ	Cognitive CQ	Motivational CQ	Behavioral CQ
Foreign Language Skill	2.89	3.43	.29**	.20*	.35**	.25*	.05
Depth of International Traveling	2.58	3.41	.29**	.22*	.33**	.31**	.03

Note: N=106

** p < .05*

*** p < .01*

Table 3. Regression Coefficients for the Prediction of Virtual Team Outcomes from Cultural Intelligence, Collective Efficacy, and Communication

	Performance	Process Satisfaction	Decision Outcome Satisfaction
Cultural Intelligence	-.12	-.16	-.01
Collective Efficacy	.12	.02	.05
Communication	.08	.36**	.43**
R	.20	.40	.45
R^2	.04	.16	.20

Note: N=106

** p < .05*

*** p < .01*

Table 4. Descriptive Information by Team Type

	Single Culture		Diverse Culture		
	M	SD	M	SD	t
Overall CQ	4.46	0.78	5.07	0.72	-4.01**
Meta-Cognitive CQ	5.14	0.91	5.52	0.96	-2.11*
Cognitive CQ	3.51	1.06	4.29	0.98	-3.84**
Motivational CQ	4.83	0.99	5.59	0.88	-4.11**
Behavioral CQ	4.57	1.06	5.08	1.12	-2.38*
Collective Efficacy	17.64	2.72	17.13	2.65	0.94
Communication	6.40	0.85	6.34	0.80	.40
Performance	0.72	0.45	0.50	0.51	2.41*
Process Satisfaction	6.22	0.69	5.81	1.12	2.30*
Decision Outcome Satisfaction	6.53	0.62	6.28	0.75	1.89

Note: N=106

** p < .05*

*** p < .01*

Table 5. Regression Coefficients for the Prediction of Cultural Intelligence from Foreign Language Skill and International Travel Experience

	Overall CQ	Meta-Cognitive CQ	Cognitive CQ	Motivational CQ	Behavioral CQ
Foreign Language Skill	.19	.11	.24*	.10	.06
Depth of International Travel Experience	.18	.16	.19	.26*	-.00
R	.33	.24	.38	.33	.05
R^2	.11	.06	.15	.11	.00

Note: N=106

** p < .05*

*** p < .01*

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Appendix A. Demographic Questionnaire

1. Sex:
   ❑ M
   ❑ F

2. Age: _____

3. Year in school:
   ❑ Freshman
   ❑ Sophomore
   ❑ Junior
   ❑ Senior
   ❑ Graduate
   ❑ Other: (please specify) _____

4. Ethnicity:
   ❑ Caucasian/white
   ❑ African American/black
   ❑ Hispanic
   ❑ Asian
   ❑ American Indian
   ❑ Other: (please specify) _____

5. Country of Citizenship:
   _____

6. Country of Residence (if different than country of citizenship):
   _____

7. Is English your primary language?
   ❑ Yes
   ❑ No

8. Please rate your level of proficiency when communicating with other people in English (1 = Not Proficient to 5 = Highly Proficient)

❑	❑	❑	❑	❑
1	2	3	4	5

9. Do you speak a foreign language? If yes, please indicate the language and your level of proficiency.

Language	Proficiency Level (1 = Not Proficient to 5= Highly Proficient)
_____	_____
_____	_____
_____	_____

10. Please indicate your level of international experience including the country visited/lived in, the length of time spent in the country, and the purpose of your visit (check all that apply).

Country	How Long	Purpose

11. What is your level of desire to travel to other countries?
- ❑ None
- ❑ Some
- ❑ Moderate
- ❑ A great deal

12. What is the level of experience interacting with people from other countries?
- ❑ No experience
- ❑ Moderately experience
- ❑ Experience
- ❑ Very experience

13. How comfortable would you be working on a team with someone from Asia (e.g., China)?
- ❑ Not comfortable
- ❑ Somewhat comfortable
- ❑ Moderately comfortable
- ❑ Very comfortable

14. How comfortable would you be working on a team with someone from North America (e.g., United States)?
- ❑ Not comfortable
- ❑ Somewhat comfortable
- ❑ Moderately comfortable
- ❑ Very comfortable

15. How comfortable would you be working on a team with someone from Europe (e.g., Germany)?
❏ Not comfortable
❏ Somewhat comfortable
❏ Moderately comfortable
❏ Very comfortable

16. How comfortable would you be working on a team with someone from Latin America (e.g., Mexico)?
❏ Not comfortable
❏ Somewhat comfortable
❏ Moderately comfortable
❏ Very comfortable

17. How comfortable would you be working on a team with someone from Africa (e.g., South Africa)?
❏ Not comfortable
❏ Somewhat comfortable
❏ Moderately comfortable
❏ Very comfortable

18. How often have you worked on projects communicating with people mostly through technology (using e-mail, chat, group systems software, etc.)?
❏ Never
❏ A couple of times a month
❏ Once a week
❏ A few times during the week
❏ Every day

19. Would you rather work with a group face-to-face or mediated through computers?
❏ No preference
❏ Face-to-Face
❏ Computer Mediated

Appendix B. Cultural Intelligence Scale

Read each statement and select the response that best describes your capabilities. Select the answer that BEST describes you AS YOU REALLY ARE.

1 = Strongly Disagree	2 = Disagree	3 = Somewhat Disagree	4 = Neither Agree nor Disagree	5 = Somewhat Agree	6 = Agree	7 = Strongly Agree

1. I am conscious of the cultural knowledge I use when I am interacting with people with different cultural backgrounds.	1	2	3	4	5	6	7
2. I am conscious of the cultural knowledge I apply to cross-cultural interactions.	1	2	3	4	5	6	7
3. I adjust my cultural knowledge as I interact with people from a culture that is unfamiliar to me.	1	2	3	4	5	6	7
4. I check the accuracy of my cultural knowledge as I interact with people from different cultures.	1	2	3	4	5	6	7
5. I know the legal and economic systems of other cultures.	1	2	3	4	5	6	7
6. I know the religious beliefs of other cultures.	1	2	3	4	5	6	7
7. I know the marriage systems of other cultures.	1	2	3	4	5	6	7
8. I know the arts and crafts of other cultures.	1	2	3	4	5	6	7
9. I know the rules (e.g., grammar) of other languages.	1	2	3	4	5	6	7
10. I know the rules for expressing non-verbal behavior in other cultures.	1	2	3	4	5	6	7
11. I enjoy interacting with people from different cultures.	1	2	3	4	5	6	7
12. I enjoy living in cultures that are unfamiliar to me.	1	2	3	4	5	6	7
13. I am confident that I can socialize with locals in a culture that is unfamiliar to me.	1	2	3	4	5	6	7
14. I am confident that I can get accustomed to the shopping conditions in a different culture.	1	2	3	4	5	6	7
15. I am sure that I can deal with the stresses of adjusting to a culture that is new to me.	1	2	3	4	5	6	7
16. I change my verbal behavior (e.g., accent, tone) when a cross-cultural interaction requires it.	1	2	3	4	5	6	7
17. I change my non-verbal behavior when a cross-cultural situation requires it.	1	2	3	4	5	6	7
18. I use pause and silence differently to suit different cross-cultural situations.	1	2	3	4	5	6	7
19. I vary the rate of my speaking when a cross-cultural situation requires it.	1	2	3	4	5	6	7
20. I alter my facial expressions when a cross-cultural interaction requires it.	1	2	3	4	5	6	7

Meta-cognitive=1,2,3, 4; Cognitive=5,6,7,8,9,10; Motivational=11,12,13,14,15; Behavioral=16, 17, 18, 19,20

Appendix C. Collective Efficacy Measure

Directions: For each statement, please indicate whether or not you believe your team can complete the task described (yes or no). Then indicate your level of certainty in your response with a rating of 1-10 where 1= not at all confident and 10= very confident.

		Column A (Y= Yes; N=No)	**Column B** (1= Not Confident; 10= Very Confident
1.	Do you think that your team has the ability to use communications software to collaborate and share information?		
2.	Do you think that your team has the ability to select the right candidate for the position?		

Appendix D. Experiment Task Materials

Study Directions

Dear Participants,

Please read the directions below in their entirety before beginning the first task.

Background information:

For this project, you are a member of a committee responsible for selecting a pilot to fly internationally for an airline company you work for. Over the next year, your company intends to start offering international flights and requires pilots with extensive professional flight experience to fill the schedule. Your company has recently posted a recruitment announcement about the new international pilot position on the company intranet. You are currently only considering existing pilots of the company for promotion into this position. To maximize the number of potential applicants, employees from four regional subsidiaries of your company are being recruited for the position. As a rule, important decisions like this one, hiring for a high responsibility position, are made by expert groups. For you, we have adopted and simplified a real decision case.

TASK 1: Initial Task Assignment (To be completed before the team discussion session)

As part of Task 1, you will be asked to review the candidate information for four pilots who have responded to the job advertisement. All four pilots currently work for your airline and have the same amount of flying hours and several years of domestic flight experience. Imagine that the information on the four pilots comes mainly from application documents and from personal conversations you had with the pilots as well as with their supervisors and colleagues.

You will need to read the document titled “Candidate Profiles” about the four pilots. After reading the profiles, select the candidate that you feel is best suited for the position. To help facilitate the decision making process, please complete the “candidate summary sheet exercise.” After completing the candidate summary exercise, please indicate which candidate you would recommend hiring for this position. Be prepared to defend why you have recommended the candidate that you have for hire during the team discussion. You will have 10 minutes to review this information and prepare for the discussion.

TASK 2: Instructions for Team Discussion

As part of Task 2 of this research session you will take part in a team discussion with another participant assigned to your team. As a team you must determine the best applicant to hire for the international pilot position based on the information you and your partner report. Note that on the basis of the total information available to you as a team, one of the four applicants is unambiguously the best according to expert opinion. It is therefore your job as a group to determine who that applicant is based on the information

that is shared during your team discussion. This may or may not be the same person that you selected in Task 1.

You will use the instant messaging for the team discussion. You may have to wait for your partner to join the discussion for a few minutes. During the team decision case activity, you may take as much time as needed to arrive at an agreement on which of the four pilots you would select for the position. In making your final group decision, please select only one candidate and provide the reason(s) of selecting that candidate.

Candidate Profiles

Directions: In preparation for your group discussion, please review the following attributes about each candidate and then complete the candidate summary sheet exercise.

Candidate A:

1. has a very good feeling for dangerous situations
2. is at times not good at taking criticism
3. can assess complex situations well
4. has excellent depth perception
5. is sometimes unorganized
6. has very good leadership qualities

Candidate B:

1. maintains composure even in crisis situations
2. is regarded as grumpy
3. is highly reliable
4. is able to assess weather conditions very well
5. is regarded as not very cooperative
6. is regarded as arrogant

Candidate C:

1. is resistant to stress
2. is not verbally skillful
3. is able to make the right decisions very quickly
4. is regarded as egocentric
5. fosters a good atmosphere within the crew
6. has a poor diet

Candidate D:

1. is able to react to unforeseen events adequately
2. is considered arrogant
3. is able to concentrate very well over long periods of time
4. commands a high problem solving ability
5. is not very suitable for leading a team
6. has a very good sense of responsibility

Candidate Profiles

Directions: In preparation for your group discussion, please review the following attributes about each candidate and then complete the candidate summary sheet exercise.

Candidate A:

1. has a very good feeling for dangerous situations
2. is regarded as a show-off
3. Is unfriendly
4. has excellent depth perception
5. is regarded as not being open to innovations
6. has very good leadership qualities

Candidate B:

1. has below average memorization skills
2. is highly reliable
3. is able to assess weather conditions very well
4. makes nasty remarks about his colleagues
5. has very good computer skills
6. adopts the wrong tone sometimes

Candidate C:

1. is not verbally skillful
2. is able to make the right decisions very quickly
3. is very conscientious
4. is very skillful in dealing with complicated technology
5. puts the security of persons he is responsible for above everything
6. has a poor diet

Candidate D:

1. is able to react to unforeseen events adequately
2. is regarded as a “know-it-all”
3. is regarded as loner
4. commands a high problem solving ability
5. is hot-headed
6. has a very good sense of responsibility

Research Task: Complete Information Regarding Applicants

Applicant A

1. has a very good feeling for dangerous situations
2. can assess complex situations well
3. has excellent depth perception
4. has very good leadership qualities
5. is at time not good at taking criticism
6. is sometimes unorganized
7. is regarded as a show-off
8. is regarded as not being open to innovation
9. is unfriendly

Applicant B

1. maintains composure even in crisis situations
2. is highly reliable
3. is able to assess whether conditions very well
4. has very good computer skills
5. is regarded as grumpy
6. is regarded as not very cooperative
7. has below average memorization skills
8. makes nasty remarks about his colleagues
9. adopts the wrong tone sometimes
10. is regarded as arrogant

Applicant C

1. is not verbally skillful
2. is regarded as egocentric
3. is able to make the right decisions very quickly
4. is resistant to stress
5. fosters a good atmosphere within the crew
6. is very conscientious
7. is very skillful in dealing with complicated technology
8. puts the security of persons he is responsible for above everything
9. has a high attention to detail
10. has a poor diet

Applicant D

1. is able to react to unforeseen events adequately
2. is able to concentrate very well over long periods of time
3. commands a high problem solving ability
4. has a very good sense of responsibility
5. is considered arrogant
6. is not very suitable for leading a team
7. is regarded as a “know-it-all”
8. is hot-headed

Candidate Evaluation Tool

Directions: in the space provided, please copy the candidate attributes identified in the candidate profile sheet and then rate each attribute with regard to how positive or negative it is for the suitability of this candidate for the position. 1 = not at all beneficial and 5 = extremely beneficial. Please indicate your answer choice by circling the number that best reflects what your think.

Candidate A Attributes	Not at all Beneficial	Slightly Beneficial	Moderately Beneficial	Very Beneficial	Extremely Beneficial
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					

Team Decision Outcome:

Directions: Please indicate which candidate your team has selected to hire for this position by placing an X next to the name listed below. Please only select one candidate and provide the reason(s) for selecting that candidate.

Candidate A _____
Candidate B _____
Candidate C _____
Candidate D _____

Reasons:
_____
_____
_____

Appendix E. Communication Measure

Directions: Please indicate your agreement with each of these items. When answering, please think about your team's communication process and using the provided response scale to indicate your experience with each item.

1 = Strongly Disagree	2 = Disagree	3 = Somewhat Disagree	4 = Neither Agree nor Disagree	5 = Somewhat Agree	6 = Agree	7 = Strongly Agree
1. There was open communication in this group.				1	2 3 4	5 6 7
2. Everyone had a chance to express their opinion.				1	2 3 4	5 6 7
3. During the exercise, group members maintained a high level of idea exchange.				1	2 3 4	5 6 7

Appendix F. Process Satisfaction Measure

Direction: This scale is designed to assess feelings and attitudes toward various meeting processes. Please consider the following characteristics of the approach your team used during the meeting and circle the point along the scale that your consider to be the most appropriate. Work rapidly. Do not return to previously completed responses.

	1	2	3	4	5	6	7	
Efficient	*	*	*	*	*	*	*	Inefficient
Coordinated	*	*	*	*	*	*	*	Uncoordinated
Fair	*	*	*	*	*	*	*	Unfair
Understandable	*	*	*	*	*	*	*	Confusing
Satisfying	*	*	*	*	*	*	*	Dissatisfying

Appendix G. Decision Outcome Satisfaction

Direction: This scale is designed to assess your satisfaction with your team's final decision outcome. When answering, please think about your team's performance and using the provided response scale indicates your satisfaction with each item.

1 = Strongly Disagree	**2 = Disagree**	**3 = Somewhat Disagree**	**4 = Neither Agree nor Disagree**	**5 = Somewhat Agree**	**6 = Agree**	**7 = Strongly Agree**

1. I am satisfied with the quality of group's decision	1	2	3	4	5	6	7
2. The final decision reflect my inputs	1	2	3	4	5	6	7
3. I feel committed to the group decision	1	2	3	4	5	6	7
4. I am confident that the group decision is correct	1	2	3	4	5	6	7
5. I feel personally responsible for the correctness of the group decision	1	2	3	4	5	6	7

Appendix H. Manipulation Check: Perceived Similarity

The following questions ask you to consider personal comparisons between yourself and your partner. For each characteristic, please rate your perceived similarity to **your partner** the rating scale (1 – 5) provided. Also indicate the degree to which it is important to you that the member in your workgroup is similar to you on this characteristic. Please describe your personal perspective on this similarity, rather than the perspective that you might be expected to have.

1 = Not Similar At All	2 = Somewhat Dissimilar	3 = Slightly Similar	4 = Somewhat Similar	5 = Highly Similar

Similarity

_____ Sense of humor (finding similar things to be funny)

_____ Creativity (ability to come up with ideas and ways of solving problems; originality)

_____ Intelligence (intellect, competence, IQ, insight)

_____ Interests (hobbies, sports, social activities)

_____ Age

_____ Geographic Origin

_____ Race/Ethnicity

_____ Education

_____ Overall (considering all those aspects)