The Effects of Cultural Intelligence on Multicultural Teams' Project Performance

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Given that the pervasiveness of multicultural teams in organisations has been steadily on the rise, many organisations and their members have realised that, regardless of their preferences, working in multicultural teams is no longer an option but rather a given feature of modern organisational reality. Consequently, both academics and practitioners have sought to answer two major questions: first, what are the effects of cultural diversity on team processes and performance and, secondly, under which conditions such teams function better and which conditions result in performance losses.

Proponents of cultural diversity incremental effects argue that diversity in work groups results in a greater variance of ideas, thus leading to higher quality problem solving. The argument places a special emphasis on the benefits of team diversity for performance on creative tasks (Cox & Blake, 1991; Knight et al., 1999). This follows a human capital perspective-based argument that a multitude of personal experiences contributes different perspectives to working on such tasks and members of culturally diverse teams posses more pulled non-redundant cognitive resources than members of homogenous teams (Bassett-Jones, 2005).

Notwithstanding the convincing arguments for the incremental effects of cultural diversity on team creative performance, there is a lack of empirical evidence to support these arguments. Indeed, a recent meta-analysis showed that cultural diversity had no effects whatsoever on task performance (Horwitz & Horwitz, 2007). The authors concluded that not only is it unclear whether culturally heterogeneous teams outperform homogenous ones but the direction and magnitude of the relationship between team diversity and performance is still not understood. We suggest that one reason for the lack of detected

effects is that members' cultural diversity, by itself, may not be a sufficient factor to harness the diverse perspectives in order to contribute to team performance.

On the other hand, decisive arguments based on Social Identity Theory claim that demographic diversity in teams generally hampers supportive team process such as communication flow, cohesiveness and intra-group trust, leading to lower-quality relationships among members of diverse teams than among those working in homogenous teams. Relational processes mediate the effects of diversity on team performance and, therefore, when they suffer so will team performance. The SIT perspective explains why demographically diverse teams tend to have more fragmented team climate and lower performance, especially in the initial team life stages. In the past decade, several studies lent empirical support for this reasoning (e.g., Ely & Thomas, 2001; Ibarra, 1993). Other studies found that, over time, highly heterogeneous culturally diverse teams catch up in performance levels as well as in improved team processes with culturally homogenous teams (Earley & Mosakowski, 2000). However, little clarity exists in understanding the roles that specific personal and situational factors play in multicultural teams' performance.

The present study contributes to the literature on multicultural teams and seeks to address the question: under which conditions diverse teams are more effective? We argue that cultural diversity, by itself, is not sufficient to bring about superior team performance. We suggest that we need to look for enabling mechanisms that help team members translate their differences into actual process and performance advantages. We suggest that Cultural Intelligence is one such enabling mechanism and pose the question: what are the effects of team members' CQ on diverse teams' performance? We investigate these questions in the context of project teams that have been brought together for a limited time period (several months in our study) in order to work on an externally evaluated task.

We argue that in order for the potential advantage of cultural diversity materialise as an actual team advantage, members need to be in a position to leverage their differences by treating these differences as welcomed rather than as threatening ones. We believe that several factors, which fall under the term *Cross Cultural Capital*, can affect team performance, in general. In Figure 1, we describe our theoretical model, which is based on concepts adapted from Ang & Van Dyne (2008) and Eisenberg et al. (2011).

We argue that cultural intelligence enables individuals to feel more comfortable and able to better operate in a culturally diverse situation; consequently, multicultural teams whose members are higher on cultural intelligence would be in a better position to positively accept cultural differences and utilise them compared to teams lower on cultural intelligence.

Based on a similar rationale, Homan et al. (2007) suggested that pro-diversity beliefs, which we include in our model as one of the distal Cross Cultural Capital (CCC) factors, decrease the disruptive effects of demographic diversity on teams' performance. In their laboratory experiment, Homan et al looked at gender homogenous and heterogeneous groups working on decision making problems and manipulated participants' pro-similarity vs. pro diversity believes. They found that diverse groups with heterogeneous information performed better when they held pro-diversity beliefs. The performance of informationally homogenous groups was unaffected by diversity beliefs. In our study, we wish to examine the potential interaction between task type and individual difference in culturally heterogeneous teams.

The individual difference we chose to focus on is Cultural Intelligence. Described by Earley and Ang in their 2003 book as well as in Thomas and Inkson's 2004 book, Cultural Intelligence (CQ) is a construct that seeks to integrate several existing concepts and

frameworks revolving around person's abilities and skills to effectively manage him/herself and to interact with others in cross cultural situations and environments. CQ has been defined as individual's capabilities to function and manage effectively in culturally diverse settings (Earley & Ang, 2003).

Recent developments contributed to both theoretical and empirical progress in this new area as evidenced by a special journal issue dedicated to Cultural Intelligence, or CQ (Earley & Ng, 2006) and by systematic empirical operationalization and validation of the CQ construct (Ang et al., 2007). The CQ is positioned as related, but essentially different from more stable individual differences such as personality traits. Thus, while certain personality characteristics (e.g., Openness to Experience from the Big Five model) predict CQ levels to some degree (e.g., Ang, Van Dyne, & Koh, 2006), CQ explains variance in cross cultural competence above and beyond stable individual differences.

The concept originates in Sternberg and Detterman's (1986) multiple intelligences framework, which put forward the concept that there are different ways to conceptualize and assess intelligence, beyond the traditional exclusive focus on cognitive elements. CQ is a specific form of intelligence focused on capabilities to grasp, reason and behave effectively in culturally diverse situations (Ang et al., 2007). CQ is a multidimensional construct that follows Sternberg's (1986) framework where he proposed different aspects of intelligence. Three of the four dimensions, metacognition, cognition and motivation, are seen as mental capabilities residing in internal affective and cognitive systems, while the fourth dimension, behavioural capabilities, captures the overt action domain.

According to Earley and Ang (2003), cognitive CQ focuses on explicit knowledge of values, norms and practices in different cultures including knowledge of social, economic and legal systems in various cultures. Individuals with high cognitive CQ are able to analyze

and understand similarities and differences across cultural contexts. Therefore, they can form more accurate expectations and are less likely to make inaccurate interpretations of cultural interactions (Triandis, 1995). Metacognitive CQ focuses on higher-order cognitive processes, those that individuals use to organize and comprehend cultural knowledge. Related capabilities include observing and revising mental models of cultural norms and behaviours. Metacognitive CQ helps individuals be better aware of others' cultural preferences and intentions before and during intercultural interactions.

Motivational CQ reflects individual's ability to initiate, maintain and sustain learning and other functional behaviours in culturally unfamiliar or diverse situations. Individuals with higher motivational CQ are capable of coping better, affectively and cognitively, in demanding multicultural conditions. Those with high motivational CQ tend to be inherently interested in learning about and approaching new cultural phenomena and they are likely to be more confident when they find themselves in culturally diverse situations.

The fourth dimension is behavioural CQ, which reflects individual's ability to employ the appropriate verbal and non-verbal actions when interaction with people from difference cultures. Such behaviour includes actions related to tone, gestures, physical space and touching rules, dress codes and practicing appropriate time management norms. Those with high behavioural CQ have a flexible enough repertoire of culturally diverse behaviours and are able to display and change them according to the cultural demands of the situation.

The four CQ dimensions are qualitatively different and each contributes in its own fashion to culturally savvy and competent interactions. While the four CQ facets are considered as conceptually independent of each other, they tend to be moderately and positively correlated (e.g., Ang et al., 2007). To sum, CQ is an aggregate multidimensional

construct where the four dimensions represent different capabilities that combine to make up the overall construct.

Recently, research in the area moved from theorizing about the nature of cultural intelligence and its dimensions to a new phase where systematic attempts to operationalize the construct were followed by designing and testing a measuring instrument that can be utilized for empirical research. Following the conceptual model set by Earley and Ang (2003), Ang et al. (2004) developed and validated a 20-item measure for the four-factor CQ construct. Subsequently, Ang, Van Dyne and Koh (2006) examined the relationship between the four-factor CQ model and personality traits demonstrating that the four CQ dimensions had discriminant validity compared to the Big Five personality traits and that certain personality characteristics related to specific CQ dimensions.

Following the studies on CQ effects, we hold that CQ will be beneficial for multicultural teams' processes and performance. Therefore, we expect that multicultural teams with higher aggregated member CQ will:

A. Have a better climate fo diversity;

B. Perform better on their projects than teams with overall lower CQ.

In terms of task context, the teams we investigate have worked on complex tasks, such that necessitate creative problem-solving at certain stages of the project. The special interest in creative problem solving follows several diversity researchers who argue that diversity has more effect on team processes and performance when the task is more creative and complex than when it is more routine and non-creative (Kurtzberg & Amabile 2001; Bassett-Jones, 2005). Tasks that are more mechanical or algorithmic in nature do not benefit from a multitude of perspectives and do not require rich array of solutions to support effective problem solving.

METHOD

Sample, Context and Procedures

We tested this hypothesis with students enrolled in Business Project (BP) courses in two major European Business Schools as part of a Masters in International Management (MIM). The MIM program, which is part of a global alliance for management education (referred to as *GAME* in this paper), is comprised of 28 leading business schools located in 27 different countries. As part of the MIM program, students study in at least two different countries. Most of the students come from Europe but an increasing number comes from other regions too. The core elements of the MIM include a Global Strategy course, a Cross-cultural Management (CCM) course and a Business Project module.

The CCM Business Project is a consultancy-like project where students work on a real-life problem facing an organization. The BP takes place in the second semester in all GAME schools and is performed in teams. This semester-long core course is very important for students academically as it carries two courses' credit and accounts for or over 20% of the students' GPA for the whole degree. The BP is also important from the professional and career perspectives since it gives them entry to companies in which they may want to work in the future. Students mostly work in multinational companies on projects spanning a variety business expertise areas ranging from marketing and HR to supply chain.

BP work is team-based and all team members in a given project receive the same grade from the academic project coordinator. Due to the nature of the program all teams are multicultural and most students do not know each other beforehand.

For the present study we collected data from two classes, who had a total of 83 students. 58 students returned the survey but nine students were omitted from the final

analysis as the teams they belonged to did not have complete enough data. Thus, our final sample consisted of 49 students of whom 27 were men. They worked in 14 teams with 3-4 members in each and average team size was 3.5. complete data was obtained from 12 teams. 20 nationalities were represented in the 49 student sample and none of the teams contained more than two persons from any given nationality.

Semi-structured interviews were conducted with a sub-sample of the participants to learn about the nature of the projects and their experience. Subsequently, students were requested to complete an electronic questionnaire, which they were sent by email. Company employees who acted as project supervisors were asked to complete a four-item questionnaire where they evaluated the projects they supervised. All surveys took place shortly after the final projects were submitted, which included both a written report as well as oral presentation of the project.

Measures

Cultural intelligence: Ang et al. (2007) CQS questionnaire, which has been the most widely used measure of CQ to date, was used to measure students' cultural intelligence (see Appendix 1 for the survey items). We chose this instrument both for its conceptual characteristics as well as for its psychometric properties. The CQS gives a holistic measure of CQ while also producing four components, namely the metacognitive, cognitive, motivational, and behavioural facets. Albeit the concept of CQ reaches back to the 1950s (Ferguson, 1956), attempts to capture CQ in an international business context by self-report surveys are relatively novel. Furthermore, Ang et al. (2007) 20 item scale shows high construct validity with Cronbach's alphas ranging around 0.8.

Following the development of the CQ conceptual model, Ang et al. (2007) tested and cross-validated the 20-items self-report CQ measure called the *Cultural Intelligence Scale*

(CQS) that the team previously developed. Ang and colleagues' findings indicate that the CQS is valid and reliable across samples, time, and countries (e.g., Singapore and U.S.). Furthermore, the results of their three studies, conducted across different cultural, educational, and work settings demonstrated that systematic relationships exist between CQ dimensions and specific intercultural effectiveness outcomes. They found that CQ has unique explanatory power in predicting three aspects of intercultural effectiveness (judgement and decision making, cultural adaptation and task performance) beyond and above general mental ability, emotional intelligence, personality, age, sex and several other individual characteristics.

The CQS questionnaire we used consists of 20 item Likert-type scale ranging from *1 = not at all to 5 = to a great extent;* (α = .87.). It is comprised of four sub-scales: Meta-cognitive (MC_CQ; four items; α = .94); Cognitive (COG_CQ; six items; α = .86); Motivational (MOT_CQ; five items; α = .75); and Behavioural (BEH_CQ; five items; α = .92).

Dependent Variables

Diversity Climate: consisted of a single item: 'Cultural were tolerated and well-manged during meetings'.

Performance Measures

External: Team performance was obtained from project supervisors who worked for the company that the project was carried out for. Supervisors were not related to the MIM program and their role was to work closely with the student teams during the project. Blind to the hypotheses, they were asked to rate the project on two aspects: 1. how novel and original were the ideas proposed by the BP team and 2. how useful and appropriate were these ideas.

Slef-Report: The mean of a six-item scale asking about members' perceptions of their teams' efficacy and performnance was used (e.g., 'How would you rate your team's overall performance?'); alpha = .091.

Analyses

Due to the low N at the group level (N=12-14) and the consequently insufficient power to detect effects at that level, only correlation analyses were feaible. For all analyses, individual members' scores were aggregated to the team level.

RESULTS

Both hypotheses were partially confirmed; all correlation statistics reported are 2-tailed.

Team's acceptance of members' cultural diversity was positively correlated with Metacognitive CQ ($r = .55$; $p = .04$) and with Motivational CQ ($r = .49$; $p = .07$).

Motivation CQ correlated positively with supervisor-rated Project Usefulness ($r = .68$; $p = .02$) and Project Novelty ($r = .78$; $p = .003$) as well as with self-reported team performance ($r = .80$; $p = .001$). The correlation between Metacognitive CQ and self-reported team performance apporached marginal significance ($r = .45$; $p = .11$).

Self-reported team performance correlated positively and significantly with the two external project ratings: $r = .82$, $p = .001$ with project usefulness and $r = .62$, $p = .03$ with project novelty.

Discussion

We found that culturally diverse teams' performance benefits from members' motivational cultural intelligence. That is, enjoying interactions with new cultures, being

attracted to new cultural experiences and feeling confident about overcoming difficulties associated with working in multicultural environments related to higher perceived teamwork quality and lead to teams producing better and more novel business projects as rated by external project supervisors.

This result may be related to the other finding, that teams' diversity climate was positivelly and significantly related to both motivaitonal CQ and metcognitive CQ. Teams where members were higher on these two CQ dimensions accepted and tolerated cultural differences in the team better than teams where members had, on average, lower motivational metacognitive CQ. Conceptually, it is plausible that team diversity climate mediates the effects of CQ on team performance. Due to the low N at group level analysis, mediation analyses were not feasible.

From a theoretical perspective, the findings suggest that to better understand the performance of culturally diverse teams, we need to supplement the examinination of the levels of diversity and faultlines involved with a look into mechanisms that enable members to capitalise on their cultural differences during team work.

From an applied perspective, given recent studies indicating that CQ can be enhanced through learning and education (e.g., Eisenberg et al., 2011), the present results are encouraging and indicating that there are ways for managers (and educators!) to get culturally diverse teams perform well; this can be done by fostering the motivational aspect of CQ through training, policies and climate change.

The current study is among the first to look at the specific effects of cultural intelligence on project performance in multicultural teams. Our study has certain design strengths: compared to much previous research on cultural diversity and creative performance, we used existing organic teams, which worked over time (several months)

toward meaningful outcomes that involved actual consequences such as grades and possible job opportunities in the near future.

In addition, the two external outcome measures were not based on artificial problem-solving tasks but rather on projects that involved actual complex problem-solving in service or organizational goals. This last point relates specifically to the performance measure of project novelty and addresses concerns raised by several creativity researchers (e.g., Taggar, 2002) who criticised past group creativity research for relying on single-part tasks that require individuals to come up with ideas or uses for a thing or come up with ways to achieve a goal, typifying the dynamics of short-lived groups in contrived laboratory settings.

At the same time, our study has several obvious limitations, mostly to do with its small scope and limited sample. Due to the small sample at the group level, we could only perform correlational analyses, thus restricting the discussion on mediational processes and on the relative contribution of the examined variables to teams' performance. Therefore, the results of our study should be viewed as exploratory and a replication with a larger sample is needed to draw more solid conclusions.

REFERENCES

Ang, S. & Van Dyne, L. 2008. Conceptualization of cultural intelligence: Definition, distinctiveness, and nomological network. In S. Ang, & L. Van Dyne, (Eds.). *Handbook on cultural intelligence: Theory, measurement and applications* (pp. 3-15). Armonk, NY: M.E. Sharpe.

Ang, S., Van Dyne, L., & Koh, S. K. 2006. Personality correlates of the four-factor model of cultural intelligence. *Group and Organization Management, 31*, 100–123.

Ang, S., Van Dyne, L., Koh, C.& Ng, K. Y. 2004, August. *The measurement of cultural intelligence*. Paper presented at the 2004 Academy of Management Meetings Symposium on Cultural Intelligence in the 21st Century, New Orleans, LA.

Ang, S., Van Dyne, L., Koh, C.K.S., Ng, K.Y., Templer, K.J., Tay, C., & Chandrasekar, N.A. 2007. Cultural Intelligence: Its Measurement and Effects on Cultural Judgment and Decision Making, Cultural Adaptation and Task Performance. *Management and Organization Review, 3*, 335–371.

Bassett-Jones, N. 2005. The paradox of diversity management, creativity and innovation. *Creativity and Innovation Management, 14,* 169-175.

Cox, T. H. and S. Blake 1991. Managing cultural diversity: Implications for organizational competitiveness. *Academy of Management Executive*, *5*, 45-56.

Earley, P.C. & Ang, S. 2003. *Cultural intelligence: Individual interactions across cultures.* Palo Alto, CA: Stanford University Press.

Earley, P.C.& Mosakowski, E. (2000). Creating Hybrid Cultures: An Empirical Test of International Team Functioning. *Academy of Management Journal*, *43*(1): 26-49.

Eisenberg, J., Lee, H.J., Brück, F., Brenner, B., Claes, M.T., Bell, R., & Mironski, J. (2011). Effects of Cross-cultural Management Courses on Cultural Intelligence. A paper presented at the Annual Academy of Management Meeting, San Antonio, USA.

Ely, R. J., & Thomas, D. A. 2001. Cultural diversity at work: The effects of diversity perspectives on work group processes and outcomes. *Administrative Science Quarterly, 46,* 229–273.

Ferguson, G.A. 1956. On transfer and the abilities. *Canadian Journal of Psychology, 10*, 121-131.

Homan, A. C., van Knippenberg, D., Van Kleef, G. A., & De Dreu, C. K. W. 2007. Bridging faultlines by valuing diversity: Diversity beliefs, information elaboration, and performance in diverse work groups. *Journal of Applied Psychology, 92*, 1189-1199.

Horwitz, S. K. & I. B. Horwitz. 2007. The effects of team diversity on team outcomes: A meta-analytic review of team demography. *Journal of Management*, *33*, 987.-1015

Ibarra, H. 1993. Personal Networks of Women and Minorities in Management: A Conceptual Framework. *Academy of Management Review, 18*, 56-87.

Knight, D. et al. 1999. Top management team diversity, group process, and strategic consensus. *Strategic Management Journal*, *20*, 445-465.

Kurtzberg, T. R. & Amabile, T. M. 2001. From Guilford to creative synergy: Opening the black box of team-level creativity. *Creativity Research Journal*, *13*, 285-294.

Sternberg, R. J. 1986. A framework for understanding conceptions of intelligence. In R. J. Sternberg & D.K. Detterman (Eds.), *What is intelligence? Contemporary viewpoints on its nature and definition:* 3–15. Norwood, NJ: Ablex.

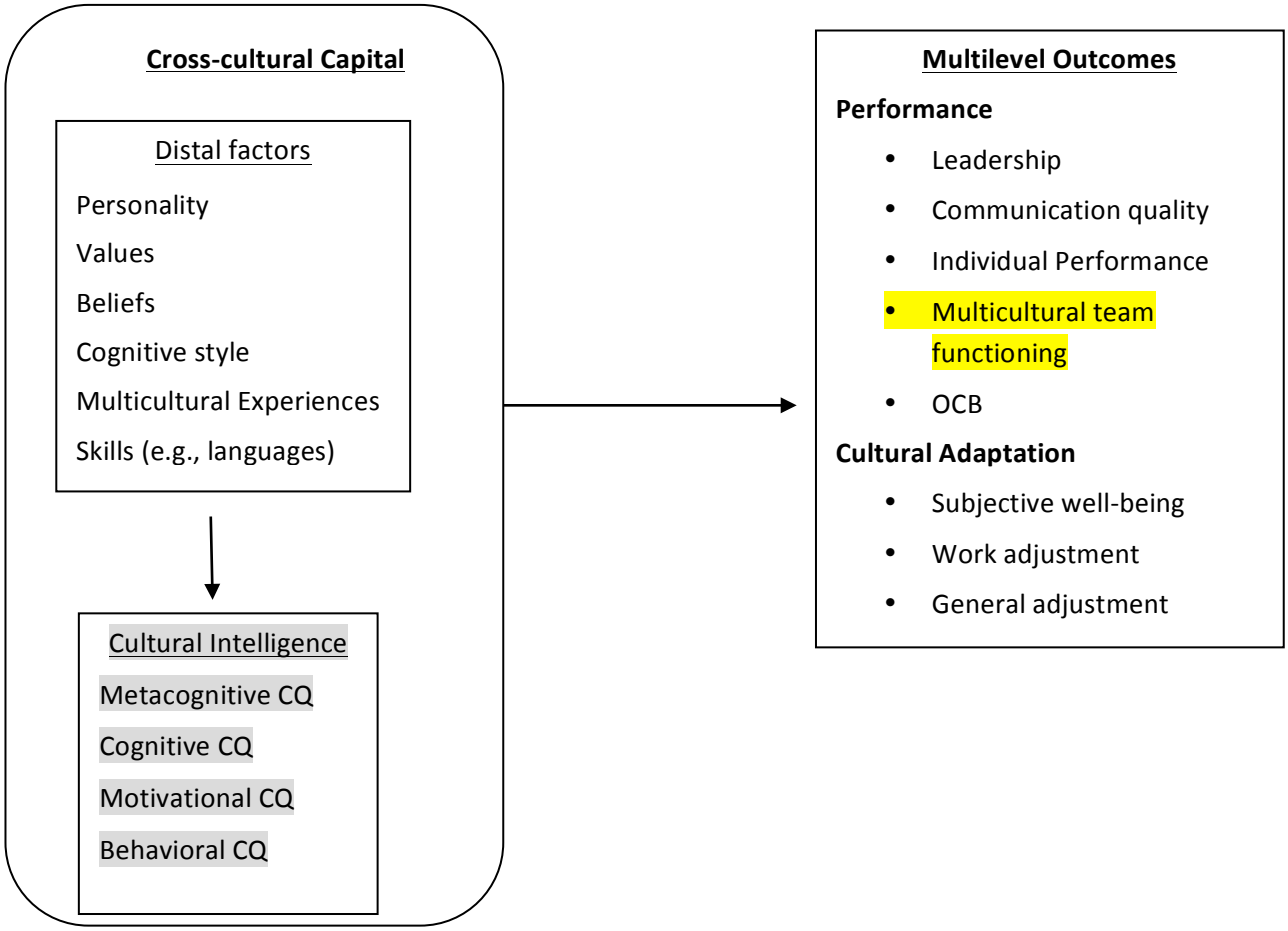
Sternberg, R. J., & Detterman, D. K. 1986. *What is intelligence? Contemporary viewpoints on its nature and definition.* Norwood, NJ: Ablex.

Taggar, S. (2002). Individual creativity and group ability to utilize individual creative resources: A multilevel model. *Academy of Management Journal, 45*(2): 315-330.

Thomas, D. C. & Inkson, K. 2004*. Cultural intelligence: People skills for global business*. San Francisco: Berrett-Koehler.

Triandis, H.C. 2006. Cultural intelligence in Organizations. *Group & Organization Management, 31*, 20-27

Figure 1. **Characteristics and Consequences of Cross Cultural Capital**



Note: adapted from a figure by Ang & Van Dyne (2008, p. 11)
Highlighted constructs were assessed in the present study.

APPENDIX I

The Cultural Intelligence Scale (CQS)

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; 7 = strongly agree)

CQ factor *Questionnaire items*

Metacognitive CQ

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 languages.
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 behaviours in 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 stresses 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.

Behavioural CQ

BEH1 I change my verbal behaviour (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 behaviour when a cross-cultural situation requires it.
BEH5 I alter my facial expressions when a cross-cultural interaction requires it.