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IMPPACTS: DEVELOPMENT OF A NEW MEASURE OF CROSS-CULTURAL COMPETENCE

by:

Barbara D. Adams, Emily-Ana Filardo, Yvonne C. DeWit, Andrea L. Brown and Craig R. Flear

Human*systems*® Incorporated
111 Farquhar St.,
Guelph, ON N1H 3N4

Project Manager:
Barbara D. Adams
(519) 836 5911 ext: 249

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as represented by
Defence Research and Development Canada Toronto
1133 Sheppard Avenue West
North York, Ontario, Canada
M3M 3B9

DRDC Toronto Scientific Authority:
Dr. Tara Holton
416-635-2101

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Author

Barbara D. Adams
Human*systems*® Incorporated

Approved by

Dr. Tara Holton
Socio-Cognitive Systems Section

Approved for release by

[Enter name here]

[Enter title here]

Abstract

The aim of this report was to develop a measure of the seven cross-cultural competencies identified in earlier research (Brown & Adams, 2011) as relevant to collaboration in a comprehensive environment (**I**ndividual differences, **M**otivation, **P**rofessionalism, **P**roblem-solving, **C**ultural knowledge, **T**hinking skills, and **S**ocial skills). The IMPPaCTS measure (Version 1) was administered to 171 Canadian Forces (CF) personnel along with a series of theoretically related measures hypothesized to be related to the various proposed subscales. Exploratory factor analysis revealed a 7- factor structure that fit the data well, and required re-definition of the factors to form IMPPaCTS Version 2, as **I**nfluence/leadership, **M**otivation, **P**eople skills, **P**roblem management/adaptability, **C**ultural knowledge, **T**hinking skills, and **S**ocial monitoring. Exploring the relationship of each IMPPaCTS item individually against theoretically related scales showed a good deal of conceptual consistency within the subscale groupings. This suggests that even as some items require revision to eliminate cross-loadings and to clarify their targeted competency, the IMPPaCTS measure does seem to show some promise as a short measure of cross-cultural competence for applied contexts.

Executive Summary

This research was carried out between June 1st, 2011 and March 31st, 2012 in support of a Defence R&D Canada - Toronto (DRDC Toronto) applied research program (ARP) investigating Canadian Forces (CF) capabilities within a joint, interagency, multinational, and public (JIMP) domain.

The ability of CF personnel to operate within a more coordinated, whole-of-government or comprehensive approach to operations has become essential due to increasingly complex operations. A key requirement for the future is to gain a more thorough understanding of the psychological competencies and attributes likely to promote the ability to work successfully within complex environments. This includes the ability to navigate within systems with diverse cultures, as when interacting with members of non-governmental organizations (NGOs) and with local populations. A literature review conducted by Brown and Adams (2011) on behalf of DRDC Toronto identified core competencies believed to be necessary to collaborate effectively in diverse operational environments (e.g., counterinsurgent operations). The outcome of the literature review was a draft framework highlighting a range of core competencies (Individual characteristics, Motivation, Professionalism, Problem-solving, Cultural-specific skills, Thinking skills, and Social skills; IMPPaCTS) believed to be most relevant when collaborating in a comprehensive environment.

This study involved creating and assessing the psychometric properties of a new scale intended to capture these cross-cultural competencies. To assess the draft IMPPaCTS scale, 171 CF personnel completed 33 items hypothesized to underlie cross-cultural competency, along with a series of other scale measures proposed to be theoretically related to the cross-cultural capabilities identified in the IMPPaCTS scale. A number of analyses were undertaken including descriptive statistics on the IMPPaCTS scale and theoretically related scales, explorations of their relationships, and an exploratory factor analysis examining the underlying structure of the IMPPaCTS scale.

Exploratory factor analysis (EFA) revealed a 7-factor structure that was conceptually meaningful even though it was slightly altered from the structure initially proposed. The subscales that emerged from this analysis were as follows:

- Influence/leadership (the tendency to make one's views known and to get others to comply with one's will)
- Motivation (the tendency to be oriented to act and willing to engage others)
- People skills (the ability to interact positively with others and to enjoy that interaction)
- Problem management/adaptability (dealing with challenges and conflict, in part through being adaptable)
- Cultural knowledge (understanding various aspects of other cultures such as religion, politics, or social norms)
- Thinking skills (the ability to approach things from various angles)
- Social monitoring (the tendency to adapt one's behaviour to best fit the situation or the people with whom one is working).

Although it seems to make some theoretical sense, this structure does show some anomalies that will need to be adjusted in future research. Despite the need to further clarify the structure of the IMPPaCTS scale, exploring the relationship of each IMPPaCTS item individually against theoretically related scales showed a good deal of conceptual consistency within the subscale groupings. This suggests that even as some items require revision to eliminate cross-loadings and to clarify their targeted competency, the IMPPaCTS measure does seem to show some promise as a short and easily applied measure of cross-cultural competence.

The final chapter of the report provides recommended revisions to the scale that we anticipate will help to improve the scale. Hopefully, future research efforts will continue to advance these efforts in order to provide the CF with a pragmatic measure that could help them better identify and measure cross-cultural competence.

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1. Project Overview

1.1 Background and Scope[1]

Defence R&D Canada - Toronto (DRDC Toronto) is currently conducting an applied program of research (ARP) exploring psychological dimensions involved in Canadian Forces (CF) requirements to operate within a more coordinated, whole-of-government or comprehensive approach to operations (i.e., Joint, Interagency, Multinational, Public, or JIMP). The capacity to be "JIMP-capable" is now cited by the Director of Land Concepts and Designs as an important enabler for the Army of Tomorrow operating concept of adaptive dispersed operations, and a key means to ensure mission success in an increasingly complex land environment (Gizewski & Rostek, 2007). Of the JIMP dimensions, the Public aspect poses some of the greatest challenges in terms of interfacing with non-military players. This research focuses on the Public aspect of the JIMP paradigm, with an emphasis on the implications for training and education for the tactical commander.

A key requirement for the future is to gain a more thorough understanding of the psychological competencies and attributes likely to promote the ability to work successfully within the JIMP environment. This includes the ability to navigate within systems with diverse cultures and assumptions, as when interacting with members of non-governmental organizations (NGOs) and local populations, two components within the Public aspect of JIMP. The construct of cross-cultural competence (3C) is relevant to this discussion, with the caveat that culture should be defined broadly to include national culture as well as organizational culture and other cultural phenomena.

This research involves an exploratory effort to create and test a new scale to explore 3C when working in collaborative environments (such as those required by the comprehensive approach) and the testing of the structure and performance of this scale in relation to other relevant measures. Our goal with this research was to take the initial steps toward the eventual creation of a new scale of 3C that would be reliable and valid and which would be amenable to being used in high tempo environments. This would require the scale to be easy to administer, short in length so that it could be completed fairly quickly, and to have face validity with a range of potential participants, including but not limited to military personnel. Given the applied contexts in which the 3C measure could potentially be used, it would need to use accessible and non-academic wording to have maximal acceptance in the targeted populations (e.g., with military personnel). More details about how we initiated the development of this measure are provided in the remainder of this report.

1.2 Work Items

The following work items were undertaken:

- Attended a start-up meeting at DRDC Toronto in June 2011.
- Worked with the Scientific Authority to define the scope of the investigation, including the incorporation of survey measures and instruments and expected data analysis.
- Supported the ethics review process for this study.
- Conducted the IMPPaCTS study.

[1] This description is adapted slightly from the Statement of Work (Holton, 2011)

1.3 Deliverables

- Monthly progress reports describing research activities.
- Proposed theoretically related questionnaire including relevant competency measures and instruments.
- Development of scenarios to help explore collaboration within the JIMP context and the competencies that influence performance. This step of the work was completed, but a description of this research is included in Thomson, Adams, Filardo, Flear, and DeWit (2012).
- Development of a preliminary new measure of 3C for military personnel (and potentially other personnel) working in complex environments requiring cross-cultural competence.
- Final DRDC Toronto contractor report.
- Survey measures and instruments and all research data on a CD upon acceptance of final report.

1.4 Relevant Past Work

A literature review conducted by Brown and Adams (2011) on behalf of DRDC Toronto identified several core competencies believed to be necessary to collaborate effectively in culturally diverse operational environments (e.g., counterinsurgent operations). This section describes this past work in more detail to provide a basis for understanding the composition of the draft IMPPaCTS scale.

The literature review required gathering and summarizing many articles related to cross-cultural competence within the comprehensive approach context. This review showed many different competencies to be relevant, and in order to guide our thinking, we developed a framework that grouped these competencies into broad categories that seemed to make theoretical sense. For example, a range of individual differences were evident in the literature. Also, social skills, cognitive skills and motivation-related skills emerged as potentially important forms of competence (each encompassing more specific skills). The full list of competencies identified during this review is shown in Table 1.

Table 1. Cross-cultural competencies in the IMPPaCTS framework

Category	Skills
Individual Characteristics	Big Five • Openness/intellect • Conscientiousness • Extraversion • Agreeableness • Emotional stability Tolerance for ambiguity or uncertainty Ethnocentrism Valuing people of other cultures Openmindedness Openness to new experiences Emotional stability/stress management Emotion regulation/self-regulation Self-efficacy
Motivation	Willingness to engage Need for cognitive closure Orientation to action Adventurousness/curiosity Motivation to learn
Professionalism	Leadership Stress management
Problem-solving	Negotiation Conflict resolution
Cultural-specific skills	Language skills, cultural knowledge
Thinking skills	Cognitive complexity Metacognitive knowledge Self-monitoring Flexibility • Perspective taking • Frame shifting Conceptual knowledge of culture
Social Skills	Cultural empathy Relationship building (e.g., building trust) Communication skills Influence & persuasion Patience

As shown in Table 1, the framework included individual characteristics (e.g., Big Five personality characteristics such as extraversion), motivation (e.g., willingness to engage), professionalism (e.g., leadership and the ability to manage stress), problem-solving (e.g., conflict management), culture-specific skills (i.e., language ability, cultural knowledge), thinking skills (e.g., metacognitive knowledge), and social skills (e.g., relationship building).

As our thinking developed, we continued to refine our sense of the most critical constructs from the list in Table 1 above. Each of the broad sets of competencies intended to be addressed in the

IMPPaCTS scale are briefly described in the sections that follow, as first described in Brown and Adams (2011).[2]

1.4.1 Individual Characteristics

As noted in Brown and Adams (2011), previous research suggests that personality may play an important role in successful inter-cultural interactions. For instance, Hogan and Roberts (2000, as cited in Abbe, Gulick, & Herman, 2007) note that initial cross-cultural experiences can be classified as occurring within weak or ambiguous situations. In ambiguous circumstances, they argue that one's personality could be a dominant factor that guides behaviour.

Researchers investigating 3C within the United States (US) military have argued that the Big Five personality factors (i.e., emotional stability, conscientiousness, etc.) have received support as contributors to successful cross-cultural interactions (Abbe et al., 2007).

- *Extraversion*. Extraversion is reported to have a number of nuances in the literature, including assertiveness, energy and spontaneity, as well as dominance, confidence, and agency. It is also often associated with sociability (Carver & Connor-Smith, 2010).
- *Agreeableness.* Agreeableness relates to traits like being helpful and friendly (Carver & Connor-Smith, 2010). Agreeableness has also been labelled as likability and friendly compliance in the personality literature (John & Srivastava, 1999).
- *Conscientiousness.* Conscientiousness refers to qualities related to purposeful planning and persistence, and acceptance of responsibility (Carver & Connor-Smith, 2010). Conscientiousness has also appeared in the personality literature as dependability, task interest and will to achieve (John & Srivastava, 1999).
- *Openness to new experiences/Flexibility*. Openness represents a person's extent of interest and drive to learn about and gain new experiences, such as in a cross-cultural setting (Ang et al., 2004, as cited in Ross, Thornson, McDonald, & Arrastia, 2009). Individuals with an open mind are likely to seek out and explore new situations and regard them as challenges (rather than hindrances) that motivate them to seek out and engage with others from different cultures (Ross et al., 2009). A closely related construct noted in the literature is openmindedness. Openmindedness is "an open and unprejudiced attitude toward outgroup members and towards different cultural norms and values" (Van der Zee & Van Oudenhoven, 2000, p. 294). Openmindedness may be a competency that allows a person to acquire the rules and values of a new culture.
- *Emotional stability.* Emotional stability is "the tendency to remain calm in stressful situations versus a tendency to show strong emotional reactions under stressful circumstances" (Van der Zee & Van Oudenhoven, 2000, p. 294).
- *Self-Regulation/Emotion regulation*. Other constructs that seem to be closely related to emotional stability are described in the literature as self-regulation and emotional regulation. Ross and Thornson (2008) categorize self-regulation and emotional regulation as a single variable reflecting the ability to control oneself during performance. More specifically, emotion regulation refers to one's ability to regulate or control one's emotions so that they do not interfere with one's performance (Gross & John, 2003, as cited in Ross

[2] It is worth noting that the 7 categories into which the various competencies are grouped in Table 1 have evolved as our thinking has progressed.

et al., 2009). Hence, self-regulation and emotional regulation seem to be described as the processes that precede and/or promote emotional stability. Matsumoto et al. (2003, as cited in Abbe et al., 2007) found that emotion regulation predicted subjective adjustment, satisfaction with life, and lower levels of culture shock in immigrant and expatriate samples. Emotion regulation was traditionally believed to be especially important for military leaders. However, the complexity of today's cross-cultural missions makes emotion regulation an important skill across all ranks and job types in the military (Ross et al., 2009).

- *Tolerance for ambiguity or uncertainty*. Although there is a lack of consensus in the literature about the definition of tolerance for ambiguity (Ross & Thornson, 2008; Yamazaki & Kayes, 2004), this competency emerges at many points in the literature. Despite the lack of conceptual clarity, this competency has been linked to intercultural outcomes in research (Abbe et al., 2007; McDonald, McGuire, Johnston, Selmeski and Abbe, 2008). For instance, Nishida (1985, as cited in Abbe et al., 2007) rated Japanese students studying in the US on their level of cross-cultural adaptation, including their experience of culture shock. Results indicated that tolerance for ambiguity was substantially related to culture shock. Specifically, students who had more positive ratings of their experience and who experienced less culture shock were able to react to new and uncertain situations with minimal discomfort.

1.4.2 Motivation

Motivation is another important aspect of competence within the Public domain. Several constructs possibly related to motivation were identified in Brown and Adams (2011). The constructs deemed likely to be most influential in cross-cultural environments guided the development of IMPPaCTS items within this broad area. As described in Brown and Adams (2011), these are as follows:

- *Willingness to engage*. Willingness to engage is the tendency to actively seek out and explore unfamiliar cross-cultural interactions and to regard such interactions as a positive challenge (McDonald et al., 2008). Abbe et al. (2007) argue that a person who is uninterested or unwilling to verbally interact with host nationals of a foreign culture will find it more difficult to adjust and function in that culture. A study of Japanese expatriates on assignment in the US found that willingness to communicate was positively associated with interaction adjustment (Takeuchi, Yun & Russell, 2002, as cited in Abbe et al., 2007).

- *Orientation to action/Initiative*. Orientation to action is an individual's courage to take action or to "make things happen" (McCall, 1994, as cited in Van der Zee & Van Oudenhoven, 2000). Action-oriented people have the tendency to strive for results, take initiative, problem solve, and to know what they want to achieve (Van der Zee & Van Oudenhoven, 2000, Yamazaki & Kayes, 2004). These types of people will be more likely to actively engage in intercultural situations. Although this characteristic seems to receive a positive frame in the available literature, it is important to note that this agentic stance may also impact negatively on relationship building if a slower and more deliberative approach is preferred by one's collaborative partner (Thomson, Adams, Hall, Brown, & Flear, 2011).

- *Motivation to learn*. Hardison et al. (2009) describe self-initiated learning as the motivation to learn more about a country or its culture than what was provided during training. It requires a desire to improve one's cross-cultural performance and a willingness to go above and beyond one's training. Hardison et al. (2009) suggest that self-initiated learning can take the form of volunteering for additional training, spending off-duty time with locals, talking to others from the country (e.g., interpreters), and learning on one's own using the Internet, reading books, or using computer-based software.

- *Self-efficacy*. Bandura (1997, p. 3) defines self-efficacy as "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments." Ross et al. (2009) argue that self-efficacy is a critical motivational component of cultural competence because it involves the *belief* that one has the power to produce an effect. For instance, a person with high self-efficacy may engage in more cross-cultural interactions and persist in these interactions, whereas a person with low self-efficacy would have feelings of self-doubt and would be likely to withdraw from such encounters much sooner. Existing research has established a link between high self-efficacy beliefs and higher work and interaction adjustment for expatriates working abroad (Palthe, 2004, as cited in Abbe et al., 2007).

1.4.3 Professionalism

Brown and Adams (2011) also noted two other relevant constructs critical to performing in diverse environments and provisionally categorized them as elements of professionalism. These are the ability to show leadership and to manage stresses when working in complex environments.

- *Stress management*. Being immersed in a foreign culture can be very stressful. It is not surprising then that Hammer (1987, as cited in Abbe et al., 2007) identified stress management as a critical component of intercultural communication competence. Stress management involves an ability to deal with stressful situations, to make sense of them, to control one's reactions to the situations, and to remain patient until an outcome is achieved (Yamazaki & Kayes, 2004). Research has found that stress that is not managed or reduced can result in illness, lower job satisfaction, and lower job performance (cf. Hardison et al., 2009).
- *Leadership*. McDonald et al. (2008) state that performing effectively in other cultural settings requires cognitive and behavioural leadership skills. Effective leaders use their previous experiences to extract insights about themselves and cultures and then employ those experiences within other cultures (Boyacigiller, Goodman, & Phillips, 2003, as cited in McDonald et al., 2008). Hardison et al. (2009) also note that the ability to establish authority and the ability to influence others both contribute to leadership.

1.4.4 Problem-Solving

As noted by Brown and Adams (2011), working collaboratively in complex environments requires the ability to problem solve. In particular, negotiation and conflict resolution skills are two important aspects of problem-solving represented in the literature.

- *Negotiation*. Identified as an important aspect of 3C (Hardison et al., 2009; McDonald et al., 2008), negotiation refers to the ability to use both cognitive and behavioural skills to share information directly or indirectly within one's own culture and between one's own culture and another culture. Failure to use appropriate negotiation tactics can result in loss of respect and/or failed negotiations (Hardison et al., 2009).
- *Conflict resolution*. Conflict resolution involves preventing, managing, defusing and resolving conflicts between others (e.g., between locals, between military personnel and locals; Hardison et al., 2009). Hardison et al. (2009) note the importance of conflict resolutions skills when deployed in foreign cultures. Specifically, conflict resolutions skills are particularly important for military personnel who interact with local people, serve in a policing capacity, or serve in a diplomatic role.

1.4.5 Cultural Knowledge

Cultural knowledge. As noted in Brown and Adams (2011), knowing basic facts about a specific region or ethnicity helps one to be better prepared when working within a specific region or with members of a specific ethnic group (Brislin & Yoshida, 1994, as cited in McDonald et al., 2008). Information that has been cited as being helpful for understanding the culture within which one is working includes knowledge of the political system and the economy, how decisions are made, social norms, and major influences such as education and religion (Haskins, 2010). In fact, Abbe et al. (2007) argue that people expected to have prolonged contact with a specific culture require a complex understanding of that culture. Having a complex understanding of a host culture allows one to interpret unexpected situations and experiences and to apply this learned knowledge to subsequent situations. People with a more complex understanding of a culture are more likely to take cultural explanations into consideration when making attributions for behaviour (Detweiler, 1980, as cited in Abbe et al., 2007). Again, however, it seems likely that although this knowledge helps to provide a base for further relationship building, it is not adequate for enabling true competence. Nonetheless, having some knowledge about a culture may facilitate cross-cultural interactions.

1.4.6 Thinking Skills

As noted in Brown and Adams (2011), many different thinking skills are likely to impact on how intercultural interactions unfold. Specific thinking skills that emerged as our understanding of 3C evolved are as follows:

Self-monitoring/metacognitive knowledge. Self-monitoring is an individual's motivation and ability to observe and adjust his/her behaviour in a socially appropriate way depending on situational cues (Snyder, 1974). High self-monitors are able to readily change their behaviour according to their situation (Ross & Thornson, 2008), whereas low self-monitors are less likely to change their behaviour regardless of the situation. Existing research suggests that self-monitoring is beneficial for general and social aspects of adjustment to new cultural settings (Abbe et al., 2007). In particular, individuals who score higher on the self-monitoring scale report feeling more adjusted to life in new cultures and interacting with host nationals (Harrison et al., 1996, as cited in Abbe et al., 2007). Ross and Thornson (2008) argue that self-monitoring is one aspect of metacognitive knowledge.

Lane (2007) argues that intercultural competence requires metacognitive maturity in the form of "a heightened sense of self-awareness, enhanced perceptive abilities, and a proclivity to reflect on experience" (p. 23). When a cultural error has been committed, these skills will allow people to be able to understand when a cultural error has occurred and to learn from the mistake.

Flexibility/adaptability. Also known as adaptability, flexibility is "the ability to adjust one's behaviour or cognitive frames of reference in response to situational cues – in particular, in response to cultural cues" (Abbe et al., 2007, p. 32). Van der Zee and Van Oudenhoven (2000) argue that people working in new cultural environments have to be able to change strategies easily because familiar ways of doing things will not necessarily work in new cultures. As such, they argue that flexibility is particularly important for multicultural effectiveness. Abbe et al. (2007) argue that flexibility involves perspective taking (i.e., the ability to view events as another person views them (Abbe et al., 2007; McDonald et al., 2008) as well as frame shifting (i.e., the cognitive ability to apply different schemas depending on the situational context).

1.4.7 Social Skills

As noted in Brown and Adams (2011), interpersonal skills have long been recognized as crucial to the success of people working in diverse environments and have even been conceptualized as the main competency of intercultural communication (Abbe et al., 2007). A number of social skills emerged as particularly important to 3C, and were hence captured in the draft IMPPaCTS items, as follows:

- *Cultural empathy*. Van der Zee and Van Oudenhoven (2000) argue that one must have a blueprint of a culture in order to function effectively within that culture. They argue that cultural empathy (or sensitivity) is a competency that helps one read or interpret a new culture. Cultural empathy is "the ability to empathize with the feelings, thoughts, and behaviours of members from different cultural groups" (Van der Zee & Van Oudenhoven, 2000, p. 294). Ross et al. (2009) argue that empathy for different others allows other factors related to 3C to emerge, such as openness to new experiences and willingness to engage.
- *Relationship building*. Relationship building is described as a competency that allows one to foster and develop human relationships (Yamazaki & Kayes, 2004). McDonald et al. (2008) identified the ability to build rapport and relationships as a key component of 3C. This includes using both cognitive and behavioural skills to quickly build a positive, short-term interpersonal cross-cultural relationship (Ross, 2008, as cited in McDonald et al., 2008). Furthermore, establishing interpersonal relationships across cultural boundaries has long-term implications for overall mission success even after the particular individual has left the area of operations (Abbe et al., 2007). One specific aspect of relationship building noted in the literature involves establishing credibility, trust and respect. Hardison et al. (2009) argue that gaining credibility, trust and respect from locals can be important to mission success and improving locals' perceptions of the military in general, thus, improving the chances for future mission success.
- *Communication skills*. Communication is defined as the effective conveying of thoughts, opinions and ideas (Kealey, Protheroe, MacDonald & Vulpe, 2004, as cited in Walker, 2010). Yamazaki and Kayes (2004) highlight the importance of communication in cross-cultural interactions. In their comprehensive review of literature on cross-cultural learning, they found that communication was continually mentioned as an important skill for cross-cultural adaptation and as a critical part of all different competencies. Similarly, verbal and nonverbal communication skills have been identified as important aspects of cultural competence in the military as well (Hardison et al., 2009; McDonald et al., 2008). For example, military and civilian personnel working for the US Department of Defence identified the ability to interpret verbal and nonverbal cues, to use appropriate hand gestures, as well as skills for appropriate gender communications as critical skills needed for 3C (McDonald et al., 2008).
- *Influence and persuasion*. Influencing others involves changing their opinions or behaviour, providing guidance, and persuading others to accept a new idea (Hardison et al., 2009). Within the Public domain, the ability to influence has an impact on mission success because effective influence techniques can result in increased support from host nationals as well as motivate them to assist the military in achieving its performance goals (Hardison et al., 2009).

Following on from the Brown and Adams (2011) literature review, DRDC Toronto then identified the need to take this initial draft framework one step further, and to create and then explore the validity of a scale intended to tap 3C. The process of scale development and refinement is described in the section that follows, and the remainder of this report presents the results of the initial efforts to relate this scale to other theoretically relevant measures.

1.5 Developing the IMPPaCTS Scale

As originally defined in the Statement of Work for this project, our aim was to develop a new scale called the IMPPaCTS scale. Of course, we recognize that there are other possible methodological approaches to creating and attempting to validate a scale that could measure cross-cultural competence besides the one that we have selected. Many longer-term scale creation efforts start with the creation of a large item pool, and result in the gradual narrowing of items as the scale is refined. Another possible approach would have been to form a 3C scale by gathering together and creating a scale compromised of existing measures of cross-cultural competence (e.g., parts of the Multicultural Personality Questionnaire/MPQ or any of the theoretically related scales available).

Several considerations have guided our decision to take the current approach, as follows:

- Our experience working with the CF suggests to us that a measure of 3C would be of great value to them, and that providing this measure in the near term rather than the longer term would be preferable. We believed that providing the CF with even an imperfect tool fairly quickly might be better than providing them with a more refined tool down the road. This meant using a streamlined approach to scale creation and testing. As such, we defined an approach that aimed to create and test a small set of IMPPaCTS items and to compare their properties in relation to a large set of theoretically related items. This approach was feasible given the uncertainties and time constraints expected, and we believed that this process would help us to understand how the IMPPaCTS items could be refined in the future in order to produce a valuable scale in the near term rather than in the longer term.
- We perceived several limitations to simply using theoretically related scales to create a new 3C scale. Some 3C measures vary in their feasibility and face validity within an applied domain. Moreover, although the theoretically related scales all capture unique aspects of cross-cultural competence, no single scale seemed appropriate for capturing the full range of competencies indicated in the literature. Although shown to have unique strengths when measuring 3C in military environments (e.g., Abbe et al., 2010), for example, the MPQ is an extremely long and time-intensive scale. Despite the important contribution that the MPQ (and other existing scales) make, we believe that a wider set of competencies is relevant to 3C. Logically, using existing measures to attempt to capture 3C would mean that either the scale would have to be very long (not a feasible option in our view, as we put high value on creating a pragmatic scale), or that it would address only limited aspects of 3C (also not acceptable from our perspective). As such, we believed that our goal of developing a short and easily administered scale that addressed the full spectrum of capabilities could not easily be realized using existing measures of 3C.
- Nonetheless, one of the potential advantages of using theoretically related scales (rather than creating an entirely new scale) is that their reliability and validity may be better established. Given how scale items are reported to behave differently with only slight variations in wording (Spector, 1992; DeVellis, 1991), using only some items from a scale or subscale and/or slightly altering their wording could change any known properties of the scale (i.e., reliability and validity). Given our explicit goal of a short and easily administered scale, we saw little obvious advantage in starting with a larger set of previously used scales when we would need to pare down the number of items used (to ensure the scale had an acceptable length) or to change the wording slightly to ensure the optimal cooperation of military personnel (our anticipated pool for this research). We believed that taking such an approach would not put us much further ahead as past research would not be an accurate guide of how these items would "perform" if altered or taken out of context. In fact, if this were defined as the desired approach, then we would advocate simply taking any one of the many available scales aimed at measuring 3C and living with

the limitations of that scale. Moreover, we believed that having the freedom to create items that captured the unique nuances of 3C might be advantageous to trying to measure it with precision within an applied context.

- Lastly, given the current lack of a short and pragmatic scale to measure cross-cultural competence, we aimed to create a unique new scale on behalf of DRDC Toronto. This goal was based on our desire to address the statement of requirements for the present work through the creation of a unique and pragmatic tool that would fill a critical gap in the current literature, and that would promote the interests of the CF and beyond.

Based on these considerations, rather than using existing measures of 3C, we worked to create a smaller set of IMPPaCTS items that would hopefully capture the most critical aspects of 3C and hence serve our purposes more directly.

Using the constructs identified in the previous Brown and Adams (2011) work, members of the HSI® research team created items to reflect the core concepts identified within the literature. Given the number of possible constructs in play and the desire to create a reasonably short scale, decisions had to be made about exactly which constructs were represented as items were created. These decisions were guided by our knowledge and experience of the 3C literature and our previous research working to understand critical competencies relevant within the military domain. Each item was intended to capture only one competency, but competencies could be represented by multiple items.

Note that although we created items thematically, and hoped that the scale might show the dimensionality posited in the initial IMPPaCTS structure, the focus of our research was more on ensuring that each item within the scale would represent an important aspect of cross-cultural competency, regardless of the other items to which it was ultimately related. At the most basic level, we predicted that a person scoring high on items in the theoretically related scales would, on average, also be likely to score high on IMPPaCTS items intended to capture the same constructs.

However, not all of our thinking about the dimensionality of the scale was well formed. For example, our positing of items as possibly loading on an "Individual Difference" factor was not conceptually consistent with the nature of individual differences, and it was much more likely that these differences would play out in the other factors of the scales (as was the case). Nonetheless, we expected that exploratory analyses of the structure of the IMPPaCTS scale would help to uncover how the items were grouped at a theoretical level while remaining open to structures that were theoretically different than initially expected. Indeed, one of the complexities that we recognized even before data analyses began was that while some IMPPaCTS items were clearly theoretically related to the established scales or subscales (e.g., that the IMPPaCTS item "I am generally an outgoing person" should be strongly related to the extraversion subscale of the Big Five), other IMPPaCTS items did not offer as clear a link to the theoretically related scales. Moreover, given the high level of relatedness among the various constructs in play, for some items, it was very difficult to predict only one relevant theoretically related scale.

Based on the theoretical framework previously described in Section 1.4 of this report, items for the IMPPaCTS scale were drafted by members of the HSI® research team. After an additional stage of review and consultation with the DRDC Toronto research team and Scientific Authority, seven new items were generated to measure constructs that were not yet being tapped. The full list of the 33 items used in Version 1 of the scale (and the hypothesized constructs on which they were posited to load) is shown in Tables 2 through 8.

In order to capture the most relevant individual differences in cross-cultural environments, the research team included several items in the first iteration of the IMPPaCTS scale, as shown in Table 2.

Table 2. IMPPaCTS items related to individual differences

Scale Item	Posited Underlying Construct
I am generally an outgoing person.	Extraversion
I tend to get along very well with others.	Agreeableness
I'm the kind of person who manages change well.	Flexibility
I keep my emotions in check when tensions are running high.	Emotional Stability/Control
I feel more comfortable when I have a clear plan.	Tolerance for Uncertainty

As noted earlier, Brown and Adams (2011) showed the importance of various forms of motivation when working in complex cultural environments. To capture some of the constructs relevant to motivation, several items were developed, as shown in Table 3.

Table 3. IMPPaCTS items related to motivation

Scale Item	Posited Underlying Construct
I like interacting with different types of people from different backgrounds.	Open(minded)ness, Social initiative
I seek opportunities to know more about other people.	Social Initiative (Willingness to engage)
I like to get things done quickly and efficiently.	Initiative/Conscientiousness
I'm a "get it done" kind of person.	Initiative
I'm constantly looking for new things to learn.	Motivation to learn/Openmindedness

Working in cross-cultural environments has also been argued to implicate leadership, as well as the ability to manage the inevitable stresses inherent in complex environments. These two elements were categorized as two particularly relevant forms of professionalism. Several items were created for IMPPaCTS as shown in Table 4.

Table 4. IMPPaCTS items related to professionalism

Scale Item	Posited Underlying Construct
I tend to be seen as a natural leader by others.	Leadership
I can deal effectively with any challenge that I encounter.	Resilience
I have a strong moral compass that governs how I act.	Leadership
It is important for me to establish cooperation and trust when working with others.	Leadership
I get people to listen to me when I know what needs to be done.	Leadership - Establishing authority
If I'm in a group of people, I make sure my views are known.	Leadership/Influence

Having the strategies necessary to solve complex problems is also indicated as critical within cross-cultural environments. To address this, three items related to managing problems and conflict were created, as shown in Table 5.

Table 5. IMPPaCTS items related to problem-solving

Scale Item	Posited Underlying Construct
I am comfortable managing conflict.	Conflict management
I approach problems from many angles to find the best solution.	Problem-Solving/Cognitive Flexibility
When a conflict arises, I am confident in my ability to find a compromise that everyone can agree on.	Conflict Management/Negotiation
I am confident in my ability to solve most problems that come my way.	Problem-solving/Self-Efficacy

As noted earlier, cultural knowledge may facilitate 3C. In the literature, knowledge of the political system and the economy, how decisions are made within a culture, social norms, and major influences such as education and religion are often identified as key elements of cultural knowledge (Haskins, 2010). These dimensions are also evident in prominent measures of 3C (e.g., Van Dyne, Ang, & Koh, 2008). Five items were developed to assess cultural knowledge, as shown in Table 6.

Table 6. IMPPaCTS items related to cultural knowledge

Scale Item	Posited Underlying Construct
I am aware of the different factors that influence decision making in other cultures.	Decision-making
I know about the cultural values and religious beliefs of other cultures.	Religion/Values
I am aware of some of the different social norms of other cultures.	Social norms/nonverbal behaviour
I understand how the economy works in other countries.	Economics
I follow international politics.	Politics

Thinking skills also emerge from the literature as important to 3C. In the literature, there is an emphasis on adapting one's thinking as necessary (e.g., flexibility), as well as on the importance of metacognition (e.g., knowing how one is being perceived and responding to that). Four items were designed to attempt to capture some of the competencies relevant to thinking, as shown in Table 7.

Table 7. IMPPaCTS items related to thinking skills

Scale Item	Posited Underlying Construct
I try to adapt my approach to the person that I'm working with.	Adaptability
I try to see things from an angle that's slightly different from other people.	Cognitive Flexibility
What's right for me is not necessarily right for everyone in the world.	Cognitive Flexibility/Perspective-taking
I adjust my behaviour to suit the people I am working with.	Frame Shifting/Self-monitoring

Lastly, working with other people requires a range of social skills. Knowing how to build relationships, to communicate and persuade others and understanding their point of view are also important competencies intended to be captured by the items shown in Table 8.

Table 8. IMPPaCTS items related to social skills

Scale Item	Posited Underlying Construct
I'm good at understanding how another person might see the world.	Cultural Empathy
I know how to connect with most people.	Relationship Building
I have strong communication skills.	Communication Skills
I can usually get people to do what I want them to do.	Influence/persuasion

Our thinking in creating items within each of these broad categories was to create a full range of items that represented important aspects of 3C, regardless of how they might be structured in the end. Although the items were organized according to underlying IMPPaCTS dimensions that seemed to make intuitive sense, the high level of conceptual interrelatedness among the different forms of 3C made this process very difficult. Indeed, a case could for made for any given item to be associated with multiple dimensions rather than simply a single dimension. It was hoped that the exploratory factor analyses would provide a potential structure that would be conceptually meaningful and that could help to disentangle the relationships among the many relevant constructs.

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2. Method

This chapter describes the procedure, measures and participants employed to explore the reliability and validity (i.e., concurrent and discriminant) of the IMPPaCTS items in this study.

2.1 Procedure

In order to increase our ability to access as many participants as possible, this study was administered using an on-line survey tool approved for use with CF personnel (i.e. Fluidsurveys, 2011). Participants for this pilot study were recruited through the efforts of Lieutenant-Colonel Dwayne Hobbs, the military liaison for the Socio-Cognitive Systems Section at DRDC Toronto. Recruitment efforts required approval from Land Force Central Area (LFCA) and the Chief of Staff (COS) office. After this approval was received, a posting was put onto the CF communication system describing the study and requesting participation from any CF personnel between the ages of 18 and 60.

The recruitment email message provided prospective participants with a link to an online information briefing (Annex A) and to the remainder of the study. This link gave details about the information expected of them if they chose to complete the questionnaire, the risks and benefits of the study, and how the results would be used to inform CF training regarding civil-military relations.

This study used implied consent rather than a consent form (Annex B). By completing the questionnaires, participants agreed that their informed consent was implied. This approach was necessary to encourage maximum participation. Implied consent was appropriate for this study, as there were minimal risks involved in participation and all possible efforts were taken to protect the privacy of participants.

After reading the information briefing, participants' gave their implied consent by clicking "next" and completed a brief demographic information form (Annex C) and all of the questionnaires (Annex D). This message appeared to have received widespread distribution throughout the LFCA, leading to very fast completion of the study. The data were collected over the course of several days in November 2011. Participants took an average of 30 minutes to complete the questionnaire. All participants received at least $20 for their participation via electronic transfer in accordance with DRDC ethics guidelines.

Unfortunately, the initial version of the questionnaires completed by participants had two problems, as follows:

- First, the questionnaire package did not ask them to indicate their full name for receipt of payment, a requirement that had not been identified in earlier discussions with DRDC Toronto Finance. As such, it was necessary to gather this information.
- Second, due to an administrative error in transferring the questionnaire onto Fluidsurveys, the IMPPaCTS questionnaire did not contain all the necessary items and contained some items from earlier draft versions that were removed or changed during deliberations among the research team.

To address these issues, participants were contacted again in December 2011 and were asked to provide their full name in order to allow processing of participant payment. They were also given the option to complete the corrected IMPPaCTS questionnaire at the same time, and to be paid $5 for their additional participation. If participants chose not to complete the additional questionnaire, they were simply paid $20 for completing the first set of questionnaires. Of the initial 215

participants who completed the first version of the IMPPaCTS questionnaire, 154 participants completed the corrected version of IMPPaCTS.

2.2 Measures

2.2.1 IMPPaCTS Scale

As described earlier in this report, the IMPPaCTS scale was created with the goal of devising a short and succinct way to capture cross-cultural competence in high-tempo environments. The previous chapter described the origin of the items. This section brings all of the items together to show the first version of the scale. In addition to showing the complete Version 1 scale, the table that follows also shows the underlying constructs that each item was posited to capture, and our initial guess at the factors that might be represented in the scale. This information is shown in Table 9.

Table 9. IMPPaCTS scale (Version 1 – pre-study)

Item	*Underlying cross-cultural competence (posited)*	*Possible factor? (to be explored through EFA)*
I am generally an outgoing person.	Extraversion	Individual differences
I tend to get along very well with others.	Agreeableness	
I'm the kind of person who manages change well.	Flexibility	
I keep my emotions in check when tensions are running high.	Emotional Stability/Control	
I feel more comfortable when I have a clear plan.	Tolerance for Uncertainty	
I like interacting with different types of people from different backgrounds.	Openmindedness, Social initiative	Motivation
I seek opportunities to know more about other people.	Social Initiative (Willingness to engage)	
I like to get things done quickly and efficiently.	Initiative/Consciousness	
I'm a "get it done" kind of person.	Initiative	
I'm constantly looking for new things to learn.	Motivation to learn, Openmindedness	
I tend to be seen as a natural leader by others.	Leadership	Professionalism/Leadership
I can deal effectively with any challenge that I encounter.	Resilience	
I have a strong moral compass that governs how I act.	Leadership	
It is important for me to establish cooperation and trust when working with others.	Leadership	
I get people to listen to me when I know what needs to be done.	Leadership - Establishing authority	
If I'm in a group of people, I make sure my views are known.	Leadership/Influence	

Item	*Underlying cross-cultural competence (posited)*	*Possible factor? (to be explored through EFA)*
I am comfortable managing conflict.	Conflict management	Problem-Solving
I approach problems from many angles to find the best solution.	Problem-Solving/Cog Flex	
When a conflict arises, I am confident in my ability to find a compromise that everyone can agree on.	Conflict Management/Negotiation	
I am confident in my ability to solve most problems that come my way.	Self-Efficacy/Problem-solving	
I am aware of the different factors that influence decision making in other cultures.	Decision-making as cultural knowledge	Cultural Knowledge
I know about the cultural values and religious beliefs of other cultures.	Religion/Values as cultural knowledge	
I am aware of some of the different social norms of other cultures.	Social norms/nonverbal behaviour as cultural knowledge	
I understand how the economy works in other countries.	Economics as cultural knowledge	
I follow international politics.	Politics as cultural knowledge	
I try to adapt my approach to the person that I'm working with.	Adaptability	Thinking Skills
I try to see things from an angle that's slightly different from other people.	Cognitive Flexibility	
What's right for me is not necessarily right for everyone in the world.	Cognitive flexibility/Perspective-taking	
I adjust my behaviour to suit the people I am working with.	Self-Monitoring/Regulation	
I'm good at understanding how another person might see the world.	Cultural Empathy	Social Skills
I know how to connect with most people.	Relationship Building	
I have strong communication skills.	Communication Skills	
I can usually get people to do what I want them to do.	Influence and persuasion	

Participants were asked to rate their level of agreement with each statement on a 5-point scale ranging from *Strongly Disagree* to *Strongly Agree*.

2.2.2 Theoretically Related Scales

To explore the value of the IMPPaCTS scale, we also compiled a number of different scales designed to capture various aspects of cross-cultural competency in accordance with the relevant constructs and dimensions identified in previous research (Brown & Adams, 2011). These scales would hopefully show the strengths and weaknesses of the IMPPaCTS measures in capturing critical competencies when working in culturally complex environments. The measures included were either existing measures found in the literature or measures from the literature that were adapted slightly to better suit the purposes of this study (e.g., to be acceptable within a military

context). Several criteria were used to guide decisions about inclusion or exclusion of the theoretically related measures and scales, as follows:

- Applicability of the measure/scale to the target construct – measures that best represented the hypothesized constructs in the model were given higher priority.
- Evidence of validity and reliability – this was often limited, but efforts were made to gather measures that had been subject to some empirical testing.
- Previous use within a military domain – when possible, measures that had been identified to have been previously used in a military setting were employed.
- Length of indicator or measure – given expected time constraints, measures that captured the relevant constructs with fewer items were preferred over longer measures. This meant that many of the better known scales for measuring specific constructs could not be used as they were not feasible because of time constraints.
- Face validity – military personnel are more willing to complete questionnaires when they see value in them – measures with esoteric or non-pragmatic items are likely to elicit low response rates.
- Response format – Likert scale self-report ratings are the easiest to obtain, and require less time to complete than formats that are open-ended.

Following these criteria, then, a range of scales relevant to measuring 3C were identified. Each of these scales (and the rationale for using them) is described in the sections that follow as well as the available evidence for the reliability and validity of the scale.[3] Note that some of multi-dimensional scales (e.g., MPQ) were used to capture several different competency areas, but are organized alphabetically by scale name in the sections that follow.

[3] Unless otherwise specified, evidence related to reliability and validity comes from the report describing the scale and referenced in the "source" field of the table.

2.2.2.1 Adjusting Emotions Subscale

The ability to self-regulate one's emotions has been noted in the literature as a critical cross-cultural competence. As cited in Brown and Adams (2011), emotion regulation has been shown to predict subjective adjustment, satisfaction with life, and lower levels of culture shock in immigrant and expatriate samples Matsumoto et al. (2003, as cited in Abbe et al., 2007), and has also been cited as an important skill for military personnel (Ross et al., 2009).

Our search for an appropriate measure of self-regulation showed a subscale (specifically, the adjusting emotional subscale) of the Affective Style Questionnaire as containing items relevant to cross-cultural competence and as showing some evidence of reliability and validity while using only a limited number of items. Relevant properties of this subscale are shown in Table 10.

Table 10. Adjusting Emotions Subscale (Affective Styles Questionnaire)

Name of Measure/Subscale:	Affective Styles Questionnaire – Adjusting emotions subscale
Source (reference if existing, who generated items if not)	Hofmann, S. G. & Kashdan, T. B. (2010). The affective style questionnaire: Development and psychometric properties. *Journal of Psychopathology and Behavioral Assessment, 32,* 255-263.
Number of items	7
Dimensions (subscales)	None
Scale used	5-point scale ranging from 1 (not at all true of me) to 5 (extremely true of me) with 3 (moderately true of me) as the midpoint.
Adaptations from original	None
Evidence of Reliability (include source if different from above)	Cronbach's Alpha = .80 & .81 in two studies; n = 434 & 495, respectively
Evidence of Validity (include source if different from above)	Hofmann and Kashdan conducted an exploratory factor analysis of the overall affective styles questionnaire that resulted in a three- factor solution, one of which was the adjusting emotions subscale. This factor structure was confirmed in their second study. A predictable pattern of relationships between the adjusting emotions subscale and other theoretically relevant measures was used to establish convergent and divergent validity.

2.2.2.2 Big Five Inventory

As noted in Brown and Adams (2011), previous research suggests that personality may play an important role in successful inter-cultural interactions. Researchers investigating 3C within the US military have argued that the Big Five personality factors (i.e., emotional stability, conscientiousness, etc.) have received support as contributors to successful cross-cultural interactions (Abbe et al., 2007).

Although there are many different Big Five measures, our search showed that it was difficult to find measures with high reliability and evidence of validity. Some of the available "short-version" measures did not appear to have acceptable psychometric properties (e.g., Gosling, Rentfrow, & Swann, 2003). However, a scale by John, Naumann and Soto (2008) seemed to offer reasonably good psychometric properties, as shown in Table 11.

Table 11. Big Five Inventory

Name of Measure:	Big Five Inventory (BFI-44)
Source (reference if existing, who generated items if not)	John, O. P., Naumann, L. P., & Soto, C. J. (2008). Paradigm shift to the integrative Big Five trait taxonomy. In O. P. John, R. Robins, & L. Pervin (Eds.), *Handbook of Personality* (3rd ed.). New York: Guilford.
Number of items	26 items used (full scale has 44)
Dimensions (subscales)	Extraversion = 1, 6, 11, 16, 21, 26, 31, 36; Agreeableness = 2, 7, 12, 17, 22, 27, 32, 37, 42; Consciousness = 3, 8, 13, 18, 23, 28, 33, 38, 43;
Scale used	5-point scale ranging from 1 (strongly disagree) to 5 (Strongly agree) with 3 (neither agree nor disagree) as the midpoint.
Adaptations from original	None
Evidence of Reliability (include source if different from above)	In Canadian and US samples, Cronbach's alphas of the BFI scales range from .75 to .90 and average above .80. Three-month test-retest stability of .85 (range of .80 - .90; Rammstedt & John, 2007).
Evidence of Validity (include source if different from above)	Significant convergent and divergent relations with other Big Five instruments as well as peer ratings provide strong evidence of validity.

As noted above, only 3 of the 5 available subscales were used to measure personality. The neuroticism and openness scales were excluded because they are already covered by subscales of the MPQ (emotional stability subscale covered neuroticism, and open-mindedness and flexibility subscales covered openness). The MPQ was preferred over the Big Five measure as the MPQ was designed for use in an intercultural setting.

2.2.2.3 Cognitive Flexibility Inventory

Cognitive flexibility has also been identified in the literature as an important part of 3C (Brown & Adams, 2011). Also known as adaptability, flexibility is "the ability to adjust one's behaviour or cognitive frames of reference in response to situational cues – in particular, in response to cultural cues" (Abbe et al., 2007, p. 32).

The Dennis and Vanderwal (2010) measure called the Cognitive Flexibility Inventory was used for this study. The CFI is a brief self-report measure of the type of cognitive flexibility necessary for individuals to successfully challenge and replace maladaptive thoughts with more balanced and adaptive thinking. The scale was designed to measure two aspects of cognitive flexibility: the tendency to perceive difficult situations as controllable; and the tendency to perceive multiple alternative explanations for life occurrences and human behaviour, and to generate multiple alternative solutions to difficult situations. It has good evidence of reliability and validity, as shown in Table 12.

Table 12. Cognitive Flexibility Inventory

Name of Measure:	Cognitive Flexibility Inventory (CFI)
Source (reference if existing, who generated items if not)	Dennis, J. & Vanderwal, J. (2010). The cognitive flexibility inventory: Instrument development and estimates of reliability and validity. *Cognitive Therapy and Research, 34*(3), 241-253.
Number of items	20
Dimensions (subscales)	Alternatives = 1, 3, 5, 6, 8, 10, 12, 13, 14, 16, 18, 19, 20; Control = 2, 4, 7, 9, 11, 15, 17.
Scale used	5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree) with 3 (neither agree nor disagree) as the midpoint.
Adaptations from original	None.
Evidence of Reliability (include source if different from above))	Internal consistency was rated as good to excellent, with a Cronbach's alpha of .91 for the Alternatives subscale, .85 for the Control subscale, and .91 for the CFI as a whole. As well, developers reported good 7-week test-retest reliability ($r = .81$; $p < .001$, $n = 196$). Alphas for both subscales were reported to be acceptable. Research by Flear, Adams, Brown, Thomson, Buick and Pickering (2011) assessed CF reservists ($n = 240$), and the reliability of both scales was high.
Evidence of Validity (include source if different from above	Preliminary evidence was reported for the CFI's convergent construct validity via the CFI's correlations with other measures of cognitive flexibility (i.e., Cognitive Flexibility Scale, $r = .73$, $p < .001$, $n = 196$, and coping, i.e., Ways of Coping Checklist-Revised). Support was also demonstrated for the concurrent construct validity of the CFI via its inverse correlations with the Beck Depression Inventory-II.

2.2.2.4 Communication Skills

As noted in Brown and Adams (2011), communication is defined as the effective conveying of thoughts, opinions and ideas (Kealey, Protheroe, MacDonald & Vulpe, 2004, as cited in Walker, 2010).

This study used the behavioural subscale of the Cultural Intelligence scale (CQS) to measure communication skills within 3C environments as the content of this subscale seemed to capture critical aspects in communication (e.g., adapting to one's counterpart) and the scale as a whole has strong evidence of reliability and validity, as seen in Table 13.

Table 13. Communication Skills (CQS Behavioral Subscale)

Name of Measure/Subscale:	CQS – Behavioral CQ subscale
Source (reference if existing, who generated items if not)	Van Dyne, L., Ang, S., & Koh, C. (2008). Development and validation of the CQS: The cultural intelligence scale. In S. Ang, & L. Van Dyne (Eds.), *Handbook of cultural intelligence: Theory, measurement and applications:* 16-38.
Number of items	5
Dimensions (subscales)	None
Scale used	5-point scale from 1 (strongly disagree) to 5 (strongly agree) with 3 (neither agree nor disagree) as the midpoint.
Adaptations from original (describe)	None
Evidence of Reliability (include source if different from above)	Cronbach's alpha = .83, .84, & .81; n = 576, 447, & 337, respectively. Research also demonstrates the test-retest reliability of the measure (Ng, Van Dyne, & Ang, 2012).
Evidence of Validity (include source if different from above)	The CQS was found to be distinct from cognitive ability, emotional intelligence, cultural judgment and decision making, interactional adjustment, and mental well-being. Factorial validity demonstrated by a stable and acceptable factor structure across samples, time, and countries as reported by Van Dyne, Ang, and Koh (2008). In a US military sample, results of the factor analysis supported a 4-factor model accounting for 64.4% of variance; the behavioural subscale had no cross-loading items (Abbe et al., 2010). The predictive validity of the behavioural subscale has strong evidence as it has been found to predict cultural adaptation and adjustment, and task performance.

2.2.2.5 Conceptual Knowledge of Culture

Cultural knowledge was identified in Brown and Adams (2011) as an important competence. Knowing basic facts about a specific region or ethnicity helps one to be better prepared when working within a specific region or with members of a specific ethnic group (Brislin & Yoshida, 1994, as cited in McDonald et al., 2008). In fact, Abbe et al. (2007) argue that people expected to have prolonged contact with a specific culture require a complex understanding of that culture. This includes knowledge of religious traditions, non-verbal behaviors, decision-making differences among people of different cultures, and knowledge of political and economic systems. Items created by HSI® to address conceptual knowledge of culture are shown in Table 14.

Table 14. Conceptual Knowledge of Culture

Name of Measure/Subscale:	Conceptual Knowledge of Culture
Source (reference if existing, who generated items if not)	Generated by researchers from Human*systems*.
Number of items	5
Dimensions (subscales)	None
Scale used	5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree) with 3 (neither agree nor disagree) as the midpoint.

2.2.2.6 Emotional Stability and Conscientiousness

As noted earlier, emotional stability and conscientiousness are two constructs typically captured within Big Five personality measures. In addition to Big Five subscales, this study also relied on an existing measure created at DRDC Toronto because it has shown good reliability in research within a military context, and relies on very few items. Information about this scale is shown in Table 15.

Table 15. Emotional Stability and Conscientiousness

Name of Measure/Subscale:	Emotional Stability and Conscientiousness Scale
Source (reference if existing, who generated items if not)	Dewit, Y., Buick, F., & Pickering, D. Development of a measure of personal mission readiness. DRDC Toronto Technical Memorandum, in preparation, 2010.
Number of items	6
Dimensions (subscales)	Conscientiousness = 1-3; Emotional Stability = 4-6
Scale used	5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree) with 3 (neither agree nor disagree) as the midpoint.
Adaptations from original	Original scale was developed as part of a larger individual mission readiness measure. Items 2, 3, 4, were modified slightly to reflect the more general use of this scale by removing mission-specific references.
Evidence of Reliability (include source if different from above)	Research by Adams, Flear, Filardo, Thomson, & De Wit (2012) assessed CF reservists (n = 1905), and the reliability of both scales was high: Conscientiousness (α = .81), Emotional Stability (α = .87).
Evidence of Validity (include source if different from above)	This measure has evidence of its convergent validity as each subscale was significantly related in the predicted manner to measures of coping, resilience, cognitive flexibility, and job engagement (Adams et al., 2012).

2.2.2.7 Global Transformational Leadership

As noted in Brown and Adams (2011), effective leadership has been linked to cross-cultural competence. One specific form of leadership likely to be important in cross-cultural environments is transformational leadership. A paper by Matveev and Lvina (2007) highlights the link between transformational leadership and cultural competence.

This study used the Global Transformational Leadership Scale to capture critical elements of leadership in a 3C context, as shown in Table 16.

Table 16. Global Transformational Leadership Scale

Name of Measure/Subscale:	Global Transformational Leadership (GTL) Scale
Source (reference if existing, who generated items if not)	Carless, S.A., Wearing, A.J., & Mann, L. (2000). A short measure of transformational leadership. *Journal of Business and Psychology, 14,* 389-405.
Number of items	6
Dimensions (subscales)	None
Scale used	5-point scale ranging from 1 (strongly disagree) to 5 (Strongly agree) with 3 (neither agree nor disagree) as the midpoint.
Adaptations from original	The original scale included 7 items. One item dealing with staff development was unrelated to the current research and, therefore, was removed. The measure was initially designed for subordinates to rate their supervisor. As a result, the remaining 6 items were revised in order to utilize the measure as a self-assessment instrument.
Evidence of Reliability (include source if different from above)	Cronbach's alpha = .93; n = 1432
Evidence of Validity (include source if different from above)	Exploratory and confirmatory factor analyses indicated that GTL was a unidimensional factor with each item loading highly on the one factor. The measure was significantly correlated with other measures of transformational leadership, providing evidence of convergent validity. Divergent validity was established by comparing two groups of managers who were expected to score distinctly on the various dimensions covered by the measure. The GTL was able to successfully discriminate between these contrasted groups of managers.

2.2.2.8 Influence and Persuasion

Influencing others involves changing their opinions or behaviour, providing guidance, and persuading others to accept a new idea (Hardison et al., 2009). When working collaboratively with other people, military researchers have argued that the ability to influence has an impact on mission success because it can result in increased support from other people as well as motivating them to assist the military in achieving its performance goals (Hardison et al., 2009).

For the purposes of this study, we attempted to capture simple elements of persuading other people, including getting one's goals met during interactions, and perceptions of having the respect necessary from others to exert influence. These (and other relevant aspects of persuasion) seemed to be captured by the Upward Influence Scale, as shown in Table 17.

Table 17. Upward Influence Scale

Name of Measure/Subscale:	Upward Influence Scale
Source (reference if existing, who generated items if not)	Mael, F.A. (1989). Measuring leadership, motivation, and cohesion among U.S. Army Soldiers. U.S. Army Research Institute for the Behavioral and Social Sciences, Technical Report 867.
Number of items	4
Dimensions (subscales)	None
Scale used	5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree) with 3 (neither agree nor disagree) as the midpoint.
Adaptations from original	Two of the original 6 items were deleted. The remaining items were revised to reflect influence with people from other organizations, such as NGOs.
Evidence of Reliability (include source if different from above)	Not available
Evidence of Validity (include source if different from above)	Not available

2.2.2.9 Multicultural Personality Questionnaire (MPQ)

The MPQ was included as it was designed to measure personality characteristics and other competencies likely to be related to positive intercultural outcomes. Furthermore, it has demonstrated strong reliability and validity, and was recommended for measuring cross-cultural competence in soldiers by Abbe, Geller, and Everett (2010). Three subscales were included to help capture personality differences, including openmindedness, social initiative and cultural empathy. Openmindedness is "an open and unprejudiced attitude toward outgroup members and towards different cultural norms and values" (Van der Zee & Van Oudenhoven, 2000, p. 294). Openmindedness may be a competency that allows a person to acquire the rules and values of a new culture. The Social Initiative subscale was included to measure social motivation.

The Cultural Empathy subscale was included in this research as a culture-specific skill. Van der Zee and Van Oudenhoven (2000) argue that one must have a blueprint of a culture in order to function effectively within that culture. They argue that cultural empathy (or sensitivity) is a competency that helps one read or interpret a new culture. Cultural empathy is "the ability to empathize with the feelings, thoughts, and behaviours of members from different cultural groups" (Van der Zee & Van Oudenhoven, 2000, p. 294). Ross et al. (2009) argue that empathy for different others allows other factors related to 3C to emerge, such as openness to new experiences and willingness to engage.

Full information about the MPQ is shown in Table 18.

Table 18. Multidimensional Personality Questionnaire

Name of Measure/Subscale:	Multicultural Personality Questionnaire
Source (reference if existing, who generated items if not)	Van der Zee, K. I., & Van Oudenhoven, J. P. (2000). The multicultural personality questionnaire: A multidimensional instrument of multicultural effectiveness, *European Journal of Personality, 14,* 291-300.
Number of items	91
Dimensions (subscales)	Cultural Empathy = 8, 14, 17, 31R, 45, 46R, 51, 60, 61, 63, 64, 68, 70, 71, 80, 82, 86, 89; Emotional Stability = 3R, 5, 6R, 15R, 23, 28, 33, 36, 38R, 44R, 52, 53R, 55R, 57, 65, 67R, 69R, 72R, 75R, 76; Flexibility = 1, 11R, 12, 16R, 19R, 21R, 22R, 32R, 37R, 42R, 43R, 50R, 56R, 83R, 85, 88, 90, 91R; Openmindedness = 10, 13, 20, 27R, 35, 54, 58, 59, 62, 66, 73, 74, 77, 78, 79, 81, 84, 87; Social Initiative = 2, 4, 7R, 9R, 18, 24R, 25, 26R, 29, 30, 34, 39, 40, 41R, 47, 48, 49R
Scale used	5-point scale ranging from 1 (not at all true of me) to 5 (extremely true of me) with 3 (moderately true of me) as the midpoint.
Adaptations from original	8 items of the original measure had awkward wording or grammatical errors, likely due to the fact that the measure was originally created in Dutch. These items were minimally revised, correcting grammatical errors and changing the wording to reflect more commonly used phrases. For example: "Keeps calm at ill-luck" was revised to "Keeps calm when difficulties arise."
Evidence of Reliability (include source if different from above)	There is strong evidence of the reliability of this measure. In Abbe et al.'s (2010) investigation of the most recent 91-item version of the scale, the MPQ total had a Cronbach's alpha of .93 and the subscales also demonstrated strong internal consistency (α ranging from .80 to .90) in the cadet sample. Similarly in the active soldier sample the MPQ total had an alpha of .93 and all but one subscale demonstrated strong reliability (α ranging from .80 - .88). However, Emotional Stability had an alpha of .69 in the active duty sample compared to an alpha of .90 in the cadet sample. In civilians the measure has also demonstrated good internal consistency (van der Zee & van Oudenhoven, 2000, 2001). An earlier version of the measure demonstrated moderate test-retest reliability (r = .64 - .79). This scale was also used in research with the U.S. military (Abbe, Geller & Everett, 2010).
Evidence of Validity (include source if different from above)	Concurrent validity has been demonstrated by the pattern of correlations between the MPQ subscales and the Big Five traits (van der Zee & van Oudenhoven, 2000). There is strong evidence of the predictive validity of the measure. The MPQ has been found to be a predictor of behavioural competence (van der Zee, Zaal, & Piekstra, 2003), adjustment and performance outcomes in culturally diverse teams (van der Zee, Atsma, & Brodbeck, 2004), as well as adjustment in individuals living abroad (van Oudenhoven & van der Zee, 2002; Leong, 2007; van Oudenhoven, Mol, & van der Zee, 2003). In addition, high scores on the MPQ were associated with more positive outcomes in regards to stressful intercultural situations (van der Zee, van Oudenhoven, & De Grijs, 2004). Factorial validity has been demonstrated by a stable factor structure across samples from different countries and cultural backgrounds (Leone, van der Zee, van Oudenhoven, Perugini, & Ercolani, 2005).

2.2.2.10 Negotiating with Others

An important aspect of being able to successfully work collaboratively in cross-cultural environments is the ability to negotiate in order to solve complex problems. Negotiation refers to the ability to use both cognitive and behavioural skills to share information directly or indirectly within one's own culture and between one's own culture and another culture (e.g., McDonald et al., 2008). Failure to use appropriate negotiation tactics can result in loss of respect and/or failed negotiations (Hardison et al., 2009).

This study relied on a subscale of the Cross-Cultural Performance Survey that specifically targeted several aspects of negotiation with others, as shown in Table 19.

Table 19. Negotiating with Others Subscale (Cross-Cultural Performance Survey)

Name of Measure/Subscale:	Cross-Cultural Performance Survey – Negotiating with others
Source (reference if existing, who generated items if not)	Hardison, C.M., Sims, C.S., Ali, F., Villamizar, A., Mundell, B., & Howe, P. (2009). *Cross-cultural skills for deployed Air Force personnel defining cross-cultural performance*. Report to the United States Air Force, MG-811-AF.
Number of items	6
Dimensions (subscales)	None
Scale used	5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree) with 3 (neither agree nor disagree) as the midpoint.
Adaptations from original	Original items referred to negotiating with the local people. Items were adapted to reflect negotiating with NGOs and people from other organizations, rather than just the local people.
Evidence of Reliability (include source if different from above)	Cronbach's Alpha = .92; n = 6,272 (Hardison et al., 2009)
Evidence of Validity (include source if different from above)	None provided.

2.2.2.11 Relationship Building

As noted in Brown and Adams (2011) building rapport and positive interpersonal relationships is identified in the literature as a key component of cross-cultural competence *(*e.g., McDonald et al. (2008; Yamazaki & Kayes, 2004). Hardison et al. (2009) argue that for military personnel, gaining credibility, trust and respect from locals can be important to improving locals' perceptions of the military and increasing the chances for future mission success.

This study used a subscale from the Cross-Cultural Performance Survey (designed for use in a military population, the US Air Force) for capturing these critical aspects of relationship building, as shown in Table 20.

Table 20. Relationship Building Subscale (Cross-Cultural Performance Survey)

Name of Measure/Subscale:	Cross-Cultural Performance Survey – Establishing Credibility, Trust, & Respect subscale
Source (reference if existing, who generated items if not)	Hardison, C.M., Sims, C.S., Ali, F., Villamizar, A., Mundell, B., & Howe, P. (2009). *Cross-cultural skills for deployed Air Force personnel defining cross-cultural performance*. Report to the United States Air Force, MG-811-AF.
Number of items	6
Dimensions (subscales)	None
Scale used	5-point scale ranging from 1 (Strongly disagree) to 5 (Strongly agree) with 3 (neither agree nor disagree) as the midpoint.
Adaptations from original	Original items tapped building relationships with the local population. Items were adapted to be more general in order to tap relationship building with NGOs. References to the "locals" were changed to "people outside my organization."
Evidence of Reliability (include source if different from above)	Cronbach's Alpha = .92; n = 6,272 (Hardison et al., 2009)
Evidence of Validity (include source if different from above)	None provided.

2.2.2.12 Resilience Scale

As noted in Brown and Adams (2011), there is good agreement in the literature about the importance of being able to manage stress when working in diverse environments (Hammer, 1987; as cited in Abbe et al., 2007). Stress management involves an ability to deal with stressful situations, to make sense of them, to control one's reactions to the situations, and to remain patient until an outcome is achieved (Yamazaki & Kayes, 2004).

For this study, the ability to manage stress was measured using the Connor-Davidson Resilience Scale (Campbell-Sills & Stein, 2007), as shown in the Table 21.

Table 21. Connor-Davidson Resilience Scale

Name of Measure:	Connor-Davidson Resilience Scale (CD-RISC)
Target construct	Resilience
Source (reference if existing, who generated items if not)	Campbell-Sills, L., & Stein, M. B. (2007). Psychometric analysis and refinement of the Connor-Davidson resilience scale (CD-RISC): Validation of a 10-item measure of resilience. *Journal of Traumatic Stress, 20*(6), 1019-1028.
Number of items	10
Dimensions (subscales)	Not applicable
Scale used	5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree) with 3 (neither agree nor disagree) as the midpoint.
Adaptations from original	None
Evidence of Reliability (include source if different from above)	Cronbach's Alpha = .85; n = 1,622 (Campbell-Sills & Stein, 2007)
Evidence of Validity (include source if different from above)	Campbell-Sills and Stein (2007) performed independent exploratory factor analyses (n = 511; 512) on the original 25-item CD-RISC. The unstable factor structure that resulted was subsequently refined through item analysis and additional exploratory (n = 532; 539) and confirmatory (n = 1622) factor analytic techniques, resulting in the 10-item unidimensional CD-RISC, which was reported to fit the data well with minimal redundancy (X^2 (35) = 176.10, $p < .001$, RMSEA = .050, CFI = .97). In addition, the CD-RISC was reported to show good convergence with theoretically predicted correlations.

2.2.2.13 Self-Efficacy

As noted in Brown and Adams (2011), self-efficacy is often indicated as an important part of cross-cultural competence. Bandura (1997, p. 3) defines self-efficacy as "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments." Ross et al. (2009) argue that self-efficacy is a critical motivational component of cultural competence because it involves the *belief* that one has the power to produce an effect. Existing research has established a link between high self-efficacy beliefs and higher work and interaction adjustment for expatriates working abroad (Palthe, 2004, as cited in Abbe et al., 2007).

This study used the General Self-Efficacy Scale by Schwarzer and Jerusalem (1995). This measure is commonly used and has demonstrated validity and reliability, as shown in Table 22.

Table 22. General Self-Efficacy Scale

Name of Measure/Subscale:	General Self-Efficacy Scale (SEFF)
Source (reference if existing, who generated items if not)	Schwarzer, R., & Jerusalem, M. (1995). *Generalized Self-Efficacy Scale*. In J. Weinman, S. Wright, & M. Johnston (Eds.), *Measures in health psychology: A user's portfolio* (pp. x-x). City: Publisher.
Number of items	10
Dimensions (subscales)	Not applicable
Scale used	5-point scale ranging from 1 (not at all true of me) to 5 (extremely true of me) with 3 (moderately true of me) as the midpoint.
Adaptations from original	The 10-item scale was originally developed in German by Jerusalem and Schwarzer in 1981. Since then, it has been translated into more than 30 languages (Schwarzer, 2009).No changes were made to the English version for this application besides moving from a 4-point to a 5-point scale to be consistent with the other measures used in this study.
Evidence of Reliability (include source if different from above)	Cronbach's Alpha = .86; n = 19,120 (Scholz, Doña, Sud & Schwarzer, 2002)
Evidence of Validity (include source if different from above)	Results of a confirmatory factor analysis performed by Scholz, Doña, Sud, and Schwarzer (2002) indicated an excellent fit of the data to the unidimensional model (GFI = .98, AGFI = .97, NFI = .97, RMR = .03, and RMSEA = .05). Additionally it was concluded that, given the reported internal consistencies, item-total correlations, factor loadings, and fit indices, the SEFF scale is reliable, homogeneous, and unidimensional across 25 nations.

2.2.2.14 Self-Leadership Questionnaire

As noted in Section 1.4.3 of this report, effective leadership is linked with cross-cultural competence in the literature. A particularly important part of leadership involves knowing oneself as a leader and staying aware of one's own abilities and even biases. Lane (2007) argues that intercultural competence requires metacognitive maturity in the form of "a heightened sense of self-awareness, enhanced perceptive abilities, and a proclivity to reflect on experience" (p. 23). When a cultural error has been committed, these skills will allow people to be able to:

- Recognize that a cultural error was committed;
- Find a causal link between the action and the observed reaction;
- Understand the reason and underlying cultural difference; and
- Learn how to avoid the same mistake in the future.

These metacognitive skills seem critical to 3C and are captured in the two subscales of the Self-Leadership Questionnaire, as shown in Table 23.

Table 23. Revised Self-Leadership Questionnaire

Name of Measure/Subscale:	Revised Self-Leadership Questionnaire (RSLQ) – evaluating beliefs and assumptions; self-observation subscales
Source (reference if existing, who generated items if not)	Houghton, J.D., & Neck, C.P. (2002). The revised self-leadership questionnaire: Testing a hierarchical factor structure of self-leadership. *Journal of Managerial Psychology, 17*, 672-690.
Number of items	8
Dimensions (subscales)	Evaluating beliefs and assumptions (1, 3, 5, 7) Self-observation (2, 4, 6, 8)
Scale used	5-point scale ranging from 1 (Not at all true of me) to 5 (Extremely true of me) with 3 (moderately true of me) as the midpoint.
Adaptations from original	None
Evidence of Reliability (include source if different from above)	Cronbach's Alpha = .78; n = 442 (Evaluating beliefs; Houghton & Neck, 2002) Cronbach's Alpha = .82; n = 442 (Self-observation; Houghton & Neck, 2002)
Evidence of Validity (include source if different from above)	Exploratory factor analysis results indicated a stable factor structure with 9 interpretable factors coinciding with the 9 subscales of the RSLQ. Factor loadings for the evaluating beliefs and assumptions subscale were .65 - .79, and for the self-observation subscale were .54 - .76.

2.2.2.15 Self-Monitoring Scale

As noted earlier, awareness and regulation of oneself is critical when working with other people. These self-regulation processes are likely to depend on the ability to actively monitor oneself in relation to other people. For example, knowing how one is being perceived and adjusting as necessary is one way to help maintain positive relationships. Self-monitoring has been linked to general and social aspects of adjustment to new cultural settings (Abbe et al., 2007). This particular measure was included as it has been commonly used in the literature and has demonstrated reliability and validity. This study relied on the Self-Monitoring Scale to attempt to capture this construct, as shown in Table 24.

Table 24. Self-Monitoring Scale

Name of Measure/Subscale:	Revised Self-Monitoring Scale (RSMS) – Ability to modify self-presentation subscale
Source (reference if existing, who generated items if not)	Lennox, R.D., & Wolfe, R.N. (1984). Revision of the self-monitoring scale. *Journal of Personality and Social Psychology, 46*, 1349-1364.
Number of items	7
Dimensions (subscales)	None
Scale used	5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree) with 3 (neither agree nor disagree) as the midpoint.
Adaptations from original	None
Evidence of Reliability (include source if different from above)	Cronbach's Alpha = .75; n = 201 (Lennox & Wolfe, 1984)
Evidence of Validity (include source if different from above)	Factor analysis indicated a 2-factor solution with factor loadings ranging from .32 - .77 on the ability to modify self-presentation subscale.

2.2.2.16 Tolerance for Uncertainty/Ambiguity

Although there is a lack of consensus in the literature about the definition of tolerance for ambiguity or uncertainty (Ross & Thornson, 2008; Yamazaki & Kayes, 2004), this competency emerges at many points in the literature. Despite the lack of conceptual clarity, this competency has been linked to intercultural outcomes in research (Abbe et al., 2007; McDonald et al., 2008). For instance, Nishida (1985, as cited in Abbe et al., 2007) rated Japanese students studying in the US on their level of cross-cultural adaptation, including their experience of culture shock. Results indicated that tolerance for ambiguity was substantially related to culture shock. Specifically, students who had more positive ratings of their experience and who experienced less culture shock were able to react to new and uncertain situations with minimal discomfort. The Tolerance of Uncertainty scale from the Cross-Cultural Competence Inventory (Ross, Thornson, McDonald, & Arrastia, 2009) was included to measure this construct, as seen in Table 25.

Table 25. Cross-Cultural Competence Inventory – Tolerance for Uncertainty Subscale

Name of Measure/Subscale:	Cross Cultural Competence Inventory (CCCI) – Tolerance for Uncertainty subscale
Source (reference if existing, who generated items if not)	Ross, K.G., Thornson, C.A., McDonald, D.P., & Arrastia, M.C. 2009. *The development of the CCCI: The cross-cultural competence inventory.* Cocoa Beach, Florida: Defense Equal Opportunity Management Institute.
Rationale for Inclusion	The Tolerance of Uncertainty scale from the Cross-Cultural Competence Inventory (Ross, Thornson, McDonald, & Arrastia, 2009) was included to measure tolerance for uncertainty, a construct that has been linked to positive intercultural outcomes in the literature.
Number of items	7
Dimensions (subscales)	None
Scale used	5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree) with 3 (neither agree nor disagree) as the midpoint.
Adaptations from original	The original scale used a 6-point scale with no midpoint. This was adjusted to a 5-point scale to be consistent with the other scales used in this study. Item 5 was revised to reflect the target population: the original item referred to a student and was changed to a person to be more general.
Evidence of Reliability (include source if different from above)	Cronbach's Alpha = .74; n = 641 US Military personnel (Ross et al., 2009)
Evidence of Validity (include source if different from above)	Limited. The various measured dimensions of the CCCI were found to be significantly correlated with one another, suggesting convergent validity. The measure was developed based on in-depth interviews with subject matter experts in addition to extensive literature reviews, providing evidence of the content validity of the CCCI (Ross et al., 2009).

2.2.2.17 Summary

Previous sections show the theoretical scales presented in an alphabetically sorted format. Table 26 summarizes these scales in terms of the original IMPPaCTS dimensions they were intended to capture and reiterates the rationale for their inclusion.

Table 26. Summary of theoretically related scales and rationale for inclusion

Scale or subscale used	Rationale for Inclusion
Individual Difference Competencies	
Extraversion (from Big Five; John, Naumann & Soto, 2008)	These subscales of the Big Five measure (John, Naumann & Soto, 2008) were included to measure personality: neuroticism and openness were excluded because they are already covered by subscales of the MPQ (emotional stability subscale covered neuroticism and open-mindedness and flexibility subscales covered openness). MPQ items that captured these constructs were preferred over the Big Five measure as the MPQ was designed for use in an intercultural setting.
Agreeableness (from Big Five; as above)	
Conscientiousness (from Big Five; as above)	
Tolerance of Uncertainty	The Tolerance of Uncertainty scale from the Cross-Cultural Competence Inventory (Ross, Thornson, McDonald, & Arrastia, 2009) was included to measure tolerance for uncertainty, a construct that has been linked to positive intercultural outcomes in the literature.
Adjusting Emotions	The Adjusting Emotions subscale of the Affective Styles questionnaire (Hofmann & Kashdan, 2010) was included to measure emotional control and regulation, important competencies for working in complex environments.
Emotional Stability and Conscientiousness	Short measure of personality, designed for use with military, demonstrated reliability, making this scale a promising measure for future applications.
Open-mindedness (MPQ subscale)	The MPQ was included as it was designed to measure personality characteristics and competencies that are related to positive intercultural outcomes. Furthermore, it has demonstrated strong reliability and validity, and was recommended for measuring cross-cultural competence in soldiers by Abbe, Geller, and Everett (2010). 3 subscales were used to explore individual differences. Two other MPQ subscales (social initiative and cultural empathy) were used to explore other competencies.
Emotional stability (MPQ subscale)	
Flexibility (MPQ subscale)	
Motivation-Related Competencies	
General Self-Efficacy Scale	Included to measure self-efficacy as it has been linked to adjustment in international assignments. This particular measure is commonly used and has demonstrated validity and reliability.
Social Initiative subscale	This subscale of the MPQ was included to measure social motivation.
Professionalism-Related Competencies	
Self-Leadership Questionnaire	This measure captures an important component of professionalism, self-leadership. This measure has demonstrated validity and evidence of factor validity.
Global Transformational Leadership	Effective leadership has been linked to cross-cultural competence. There is evidence that characteristics of transformational leadership are universally endorsed as being related to effective leadership across cultures.
Resilience	The ability to manage stress with resilience was measured using the Connor-Davidson Resilience Scale (Campbell-Sills & Stein, 2007). Stress management has been identified as a critical component of intercultural communication competence.

Scale or subscale used	Rationale for Inclusion
Problem-solving Competencies	
Negotiating with others	This subscale from the Cross-Cultural Performance Survey (Hardison et al., 2009) was included to measure negotiation skill which has been identified as an important aspect of cross-cultural competence.
Culture-Specific Skills	
Conceptual cultural knowledge	Culture-specific skills were identified in Brown and Adams (2011) as being important to cultural understanding and thus competency. As an appropriate existing scale could not be identified, the items generated were based on the types of knowledge presumed to be relevant within specific cultural contexts (Van Dyne, Ang, & Koh, 2008).
Cultural empathy (MPQ subscale)	This subscale of the MPQ was included as a culture-specific skill.
Thinking Competencies	
Self-Monitoring	Self-monitoring has been linked to general and social aspects of adjustment to new cultural settings (Abbe et al., 2007). This particular measure was included as it has been commonly used in literature and has demonstrated reliability and validity.
Cognitive Flexibility	Cognitive flexibility which has been argued to be particularly important for multicultural effectiveness. This measure has strong evidence of reliability and validity.
Social Competencies	
Relationship building	Relationship building has been identified as a key component of cross-cultural competence (Brown & Adams, 2010). The scale used in this research was designed for use in a military population, the U.=S Air force.
Communication Skills (CQS scale)	The Behavioural subscale of the Cultural Intelligence scale was included to measure communication skills as it taps into this construct and has strong evidence of reliability and validity.
Influence and Persuasion	In the 3C context, the ability to influence has an impact on mission success. The Upward Influence scale was included to measure influence and persuasion because it was designed for use in a military population.

2.3 Participants

Data from a total of 171 participants were analyzed for this report. All participants were military personnel who completed the questionnaire package containing the corrected version of the IMPPaCTS survey, 154 in conjunction with the pilot study and an additional 17 participants who completed it in conjunction with a related scenario-based negotiation study.

The general demographic composition of these military participants is shown in Table 27.

Table 27. General demographic breakdown

Variable	Category	N	%
Gender	Male	137	80.1
	Female	33	19.3
	Missing	1	0.6
Marital Status	Single	83	48.5
	Married	87	50.9
	Missing	1	0.6

Variable	Category	N	%
First Language	English	157	91.8
	French	11	6.4
	Other	3	1.8
Second Language Fluency (n = 65) *Note: Some participants listed more than one other language in which they were fluent and were counted multiple times*	French	34	52.3
	English	13	20.0
	Chinese (Cantonese and/or Mandarin)	5	7.7
	Hindi / Malayalam / Urdu	3	4.6
	Spanish	3	4.6
	Dutch, German, Italian, Korean, Polish, Portuguese (N = 2 each)	12	3.1
	American Sign Language, Arabic, Bengali, Bulgarian, Hebrew, Latvian, Punjabi, Russian (N = 1 each)	8	1.5
Level of Education	Some high school	5	2.9
	High school diploma	22	12.9
	Some university or college	51	29.8
	University or college degree	77	45.0
	Graduate degree	15	8.8
	Missing	1	0.6
Age	17 – 21 years	18	10.5
	22 – 26 years	36	21.1
	27 – 31 years	37	21.6
	32 – 36 years	24	14.0
	37 – 41 years	20	11.7
	42 – 46 years	21	12.3
	47 – 51 years	10	5.8
	52 + years	4	2.3
	Missing	1	0.6
Ethnicity/Heritage	Caucasian	43	25.1
	Canadian/French Canadian	38	22.2
	Multiple ethnicities listed	19	11.1
	European	18	10.5
	British/Scottish/Irish	16	9.4
	Asian	9	5.3
	Aboriginal, African, Hispanic (N = 2 each)	2	1.2
	Arabic, Bangladeshi, East Indian (N = 1 each)	1	0.6
	Missing	19	11.1

Looking at the demographics, then, the majority of participants were male (81%), and their first language was English (92%). Approximately one third of participants indicated that they were proficient in a second language. French and English were the most frequently cited second language fluencies. Education level was quite high, with 45% of participants reporting having either a college or university degree. The ages of participants were fairly well distributed through the various age categories. Almost half of the participants (47%) identified themselves as either Caucasian or Canadian.

The breakdown of the military related demographics of the participants is displayed in Table 28.

Table 28. Military demographics breakdown

Variable	Category	N	%
Force Represented	Regular force	53	30.9
	Reserve force	118	69.1
Rank	Pte	21	12.4
	Cpl/MCpl	65	38.2
	Sgt/WO	35	20.6
	MWO/CWO	7	4.1
	Lt/Captain	31	18.2
	Major	10	5.9
	LCol/Col	1	0.6
	Missing	1	0.6
CF job title (n = 156)	Commanding Officer (various)	32	21.6
	Infantryman	23	15.5
	Military Police	13	8.8
	Resource Management Support Clerk / Finance Clerk	12	8.1
	CIMIC	8	5.4
	ACISS / Signal Operator	6	4.1
	Vehicle / Traffic Technician	6	4.1
	Supply Technician, Rifleman / Weapons Technician (N = 4 each)	8	2.7
	Adjutant, Area Reserve Combat Service Support Coordination, Instructor Cell, Joint Operation, Logistics Officer (N = 3 each)	15	2.0
	Artillery Command Post Technician, Communicator Research, Crewman Operator, Intelligence Operator, Medical Technician, Musician (N = 2 each)	12	1.4
	Administrative Officer, Armoured Officer, Combat Engineer, Dissemination Technician, MARS Officer, Observation Party detachment member, OR clerk, Plans Major, Postal Services, Regimental Operations Officer, Special Projects Officer, Submarine Weapons Certification Officer, Superintendent Clerk, Watchkeeper (N = 1 each)	14	0.7
	Missing	15	9.6
Operational tours	0	88	51.4
	1 to 2	56	32.7
	3 to 4	22	12.9
	5 or more	5	2.9

Variable	Category	N	%
Time serving the CF	Less than a year	1	0.6
	1-3 years	16	9.4
	3-5 years	26	15.2
	5-10 years	42	24.6
	10-15 years	30	17.5
	15-20 years	15	8.8
	20-25 years	23	13.5
	25-30 years	13	7.6
	More than 30 years	5	2.9

As can be seen in Table 7, a majority of the participants were part of the reserve force. A wide range of ranks and military occupations were represented in the sample. Almost 75% of the participants had at least 5 years of military experience and approximately one-half had been on at least one operational tour.

The demographics of the participants outside of their military occupations are shown in Table 29.

Table 29. Demographics beyond military occupations

Variable	Category	N	%
Do you have another non-military occupation? (n = 170)	Yes	65	38.2
	No	105	61.7
If you have another job, how often does it require you to you interact with other people (other than your regular co-workers)? (n = 65)	More than 20 people/day	29	44.6
	More than 10 people/day	14	21.5
	More than 5 people/day	7	10.7
	Fewer than 5 people/day	9	13.8
	Fewer than 5 people/week	5	7.7
Have you received training either through your job or education related to your ability to work with other people or with diverse people? (n = 170)	Yes	128	75.3
	No	42	24.7
Have you lived in another country (outside of North America) for a period of more than 6 months? (n = 170)	Yes	69	40.6
	No	101	59.4

As can be seen in Table 29, just over one-third of participants had an occupation outside of the military and almost half of these individuals worked in jobs that required them to interact with others more than 20 times a day. Approximately 75% of participants had received training related to working with other people. Finally, less than half of the participants had lived outside of North America for a period longer than 6 months.

3. Results

This chapter provides descriptive statistics for the theoretically related scales, outlines preliminary analyses exploring the structure of the IMPPaCTS scale (and associated descriptive statistics of the IMPPaCTS items), and then explores the correlations between the IMPPaCTS items and the theoretically related scales.

3.1 Describing the Theoretically Related Scales

Before working to understand how the IMPPaCTS scale relates to the theoretically related scales intended to capture similar constructs, it is important to understand their basic properties. The tables that follow show descriptive statistics and reliabilities of each of these scales.[4]

3.1.1 Adjusting Emotions Subscale

Descriptive statistics for the adjusting emotions subscale are shown in Table 30.

Table 30. Descriptive statistics and reliabilities – Adjusting Emotions Subscale

	Valid N	Mean	Std. Dev.	Skewness	Kurtosis	Item-Total r	Alpha if deleted
Adjusting Emotion Subscale (mean inter-item correlation = .48; alpha = .86)							
I have my emotions well under control.	171	3.63	0.93	-0.5	0.0	0.56	0.85
I can avoid getting upset by taking a different perspective on things.	171	3.43	0.90	-0.1	-0.4	0.57	0.85
I can calm down very quickly.	170	3.52	0.97	-0.3	-0.5	0.71	0.83
I am able to let go of my feelings.	170	3.28	1.04	-0.4	-0.6	0.56	0.85
I can get out of a bad mood very quickly.	171	3.29	1.12	-0.2	-0.7	0.65	0.84
I know exactly what to do to get myself into a better mood.	170	3.50	0.90	-0.2	-0.3	0.65	0.84
I can get into a better mood quite easily.	171	3.40	0.96	-0.2	-0.5	0.71	0.83
Adjusting Emotion Subscale (Index)	**171**	**3.43**	**0.73**	**-0.2**	**0.2**		

As seen in Table 30, participants felt they were moderately able to adjust their emotions (M = 3.43). The adjusting emotion subscale was highly reliable (α = .86).

3.1.2 Big Five Inventory

Items from the Big Five inventory are shown in Table 31.

[4] Note that as the focus of this research is on the IMPPaCTS scale, we did not make any adjustments to the theoretically related scales (e.g., remove items with low item-total correlations or correct grammatical errors) when performing our analyses, but simply noted any relevant issues.

Table 31. Descriptive statistics and reliabilities – Big Five Inventory

I see myself as someone who…	Valid N	Mean	Std.Dev.	Skewness	Kurtosis	Item-Total r	Alpha if deleted
Agreeableness (mean inter-item correlation = .28; alpha = .77)							
Tends to find fault with others.	171	2.98	1.11	0.0	-0.9	0.45	0.75
Is helpful and unselfish with others.	171	4.14	0.75	-1.1	2.8	0.39	0.75
Starts quarrels with others. (Rev)	171	4.02	0.95	-0.6	-0.7	0.43	0.75
Has a forgiving nature.	169	3.71	1.06	-0.7	-0.2	0.39	0.76
Is generally trusting.	170	4.03	0.94	-1.4	2.1	0.39	0.75
Can be cold and aloof. (Rev)	171	3.43	1.19	-0.3	-0.9	0.54	0.73
Is considerate and kind to almost everyone.	171	4.19	0.74	-0.9	1.8	0.55	0.74
Is sometimes rude to others. (Rev)	170	3.47	1.15	-0.2	-1.1	0.54	0.73
Likes to cooperate with others.	170	4.35	0.72	-1.2	2.6	0.40	0.75
Agreeableness (Index)	**170**	**3.81**	**0.57**	**-0.4**	**0.3**		
Conscientiousness (mean inter-item correlation = .37; alpha = .84)							
Does a thorough job.	171	4.30	0.79	-1.6	4.2	0.51	0.81
Can be somewhat careless. (Rev)	169	3.73	1.09	-0.7	-0.4	0.60	0.80
Is a reliable worker.	170	4.57	0.61	-1.7	5.7	0.59	0.81
Tends to be disorganized. (Rev)	170	3.71	1.12	-0.6	-0.6	0.47	0.82
Tends to be lazy. (Rev)	170	3.89	1.02	-0.5	-0.8	0.52	0.81
Perseveres until the task is finished.	171	4.26	0.82	-1.3	2.4	0.53	0.81
Does things efficiently.	170	4.29	0.72	-1.2	2.7	0.56	0.81
Makes plans and follows through with them.	171	4.14	0.79	-1.0	1.6	0.60	0.80
Is easily distracted. (Rev)	171	3.13	1.11	0.0	-1.0	0.50	0.81
Conscientiousness (Index)	**170**	**4.00**	**0.59**	**-0.5**	**0.2**		
Extraversion (mean inter-item correlation = .37; alpha = .82)							
Is talkative.	170	3.62	1.07	-0.4	-0.6	0.57	0.80
Is reserved. (Rev)	170	3.08	1.11	0.1	-0.9	0.58	0.79
Is full of energy.	171	3.88	0.82	-0.6	0.4	0.50	0.81
Generates a lot of enthusiasm.	171	3.82	0.82	-0.1	-0.7	0.52	0.80
Tends to be quiet. (Rev)	171	3.05	1.15	0.0	-0.9	0.66	0.78
Has an assertive personality.	170	3.75	1.04	-0.7	0.0	0.39	0.82
Is sometimes shy, inhibited. (Rev)	170	3.13	1.12	0.2	-1.1	0.52	0.80
Is outgoing, sociable.	170	3.90	0.99	-0.8	0.2	0.61	0.79
Extraversion (Index)	**170**	**3.52**	**0.68**	**-0.2**	**-0.3**		

Participants in this study rated themselves as being moderately high on agreeableness ($M = 3.81$) and conscientiousness ($M = 4.00$) and as being moderately extraverted ($M = 3.52$). Participants were most likely to feel that they were reliable workers ($M = 4.57$) and least likely to feel that they did not found fault with others ($M = 2.98$). The conscientiousness item related to being a reliable worker was negatively skewed and leptokurtic. Over 95% of participants agreed or strongly agreed with this statement. Furthermore, over 90% of participants agreed or strongly agreed that they were

the type of person who "does a thorough job." Reliability was moderately high for all three subscales (α = .77 to .84), which was consistent with past findings.

3.1.3 Cognitive Flexibility Inventory

Table 32 examines the psychometric properties of the Cognitive Flexibility Inventory.

Table 32. Descriptive statistics and reliabilities – Cognitive Flexibility Inventory

	Valid N	Mean	Std.Dev.	Skewness	Kurtosis	Item-Total r	Alpha if deleted
Cognitive Flexibility - Alternatives (mean inter-item correlation = .40; alpha = .89)							
I am good at "sizing up" situations.	171	4.08	0.68	-0.4	0.4	0.39	0.89
I consider multiple options before making a decision.	171	4.06	0.78	-0.6	0.0	0.75	0.88
I like to look at difficult situations from many different angles.	171	4.07	0.74	-0.9	1.8	0.70	0.88
I seek additional information not immediately available before attributing causes to behaviour.	170	3.79	0.84	-0.7	1.0	0.35	0.90
I try to think about things from another person's point of view.	170	4.05	0.77	-1.1	2.5	0.63	0.88
I am good at putting myself in others' shoes.	171	3.87	0.85	-0.8	0.8	0.47	0.89
It is important to look at difficult situations from many angles.	171	4.33	0.70	-1.2	2.8	0.53	0.89
When in difficult situations, I consider multiple options before deciding how to behave.	171	3.95	0.81	-1.2	2.5	0.69	0.88
I often look at a situation from different viewpoints.	169	4.09	0.78	-1.2	2.8	0.76	0.88
I consider all the available facts and information when attributing causes to behaviour.	171	3.93	0.78	-0.8	1.1	0.55	0.89
When I encounter difficult situations, I stop and try to think of several ways to resolve it.	171	4.02	0.86	-0.9	1.1	0.64	0.88
I can think of more than one way to resolve a difficult situation I'm confronted with.	171	4.19	0.65	-1.0	3.4	0.50	0.89
I consider multiple options before responding to difficult situations.	170	4.08	0.78	-1.2	3.1	0.72	0.88
Cognitive Flexibility - Alternatives (Index)	**171**	**4.04**	**0.51**	**-0.4**	**0.2**		

	Valid N	Mean	Std.Dev.	Skewness	Kurtosis	Item-Total r	Alpha if deleted
Cognitive Flexibility - Control (mean inter-item correlation = .38; alpha = .80)							
I have a hard time making decisions when faced with difficult situations. (Rev)	171	3.96	1.05	-0.9	0.0	0.62	0.77
When I encounter difficult situations, I feel like I am losing control. (Rev)	171	4.11	0.92	-1.1	1.0	0.58	0.78
When encountering difficult situations, I become so stressed that I cannot think of a way to resolve the situation. (Rev)	170	4.27	0.93	-1.4	1.7	0.55	0.78
I find it troublesome that there are so many different ways to deal with difficult situations.	171	3.97	1.04	-0.8	-0.2	0.55	0.78
When I encounter difficult situations, I just don't know what to do. (Rev)	171	4.25	0.87	-1.4	2.2	0.67	0.76
I am capable of overcoming the difficulties in life that I face.	170	4.29	0.79	-1.8	5.5	0.23	0.83
I feel I have no power to change things in difficult situations. (Rev)	171	3.90	0.97	-0.7	-0.3	0.60	0.77
Cognitive Flexibility - Control (Index)	**171**	**4.11**	**0.65**	**-0.6**	**-0.1**		

As can be seen in Table 32, participants rated themselves highly on both the alternatives and control subscales of cognitive flexibility (*M*s = 4.04 and 4.11, respectively). Participants agreed most strongly with the idea that "it is important to look at difficult situations from many angles" (*M* = 4.33). They agreed least with the idea that "I seek additional information not immediately available before attributing causes to behaviour" (*M* = 3.79). Both subscales were highly reliable (α = .89 & .80). Most items were somewhat negatively skewed, but had a reasonable spread around the mean. The item "I am capable of overcoming the difficulties in life that I face," however, was both negatively skewed and leptokurtic. Almost 92% of participants indicated that they agreed or strongly agreed with this statement. Removing this item did not significantly alter the reliability of the scale, therefore, it was retained for these analyses. However, given the low item-total correlation, it may be advisable to remove this item if this scale is used in future efforts.

3.1.4 Communication Skills

The next table examines the psychometric properties of the communication scale (Van Dyne, Ang, & Koh, 2008), as shown in Table 33.

Table 33. Descriptive statistics and reliabilities – Communication Skills

	Valid N	Mean	Std.Dev.	Skewness	Kurtosis	Item-Total r	Alpha if deleted
Communication Skills (mean inter-item correlation = .51; alpha = .83)							
I change my verbal behaviour (e.g., accent, tone) when an interaction requires it.	171	4.14	0.94	-1.4	2.3	0.64	0.80
I use pause and silence differently to suit different situations.	171	3.95	0.90	-1.0	1.3	0.60	0.81
I vary the rate of my speaking when a situation requires it.	171	4.12	0.87	-1.1	1.4	0.57	0.82
I change my non-verbal behaviour when a situation requires it.	170	4.09	0.82	-0.9	1.1	0.69	0.79
I alter my facial expressions when a situation requires it.	171	3.96	0.92	-0.9	0.8	0.68	0.79
Communication Skills (Index)	**171**	**4.05**	**0.69**	**-0.9**	**1.6**		

As can be seen in Table 33, participants reported themselves to be moderately high in communication skills ($M = 4.05$). The means of all items were between 3.95 and 4.14. All of the items were somewhat negatively skewed, but they did have a fairly good spread around the mean. The overall scale had very good reliability ($\alpha = .83$).

3.1.5 Conceptual Knowledge of Culture

The next scale examined was the scale created by HSI® intended to tap issues related to conceptual knowledge of culture.

Table 34. Descriptive statistics and reliabilities – Conceptual Knowledge of Culture

	Valid N	Mean	Std.Dev.	Skewness	Kurtosis	Item-Total r	Alpha if deleted
Conceptual Knowledge of Culture (mean inter-item correlation = .41; alpha = .75)							
I have knowledge of different religions (other than my own).	171	4.38	0.74	-1.2	1.4	0.12	0.84
I am aware of some of the ways nonverbal behaviours differ between cultures.	171	3.82	0.98	-0.9	0.4	0.72	0.67
Individuals from other cultures may make decisions in a different way than I do.	171	3.95	0.89	-0.9	0.8	0.50	0.75
I know about the economic systems in some other countries.	171	3.41	1.14	-0.5	-0.6	0.67	0.69
I have knowledge of different political systems that exist outside of Canada.	170	3.78	1.05	-0.8	0.1	0.74	0.66
Conceptual Knowledge of Culture (Index)	**171**	**3.87**	**0.70**	**-0.5**	**-0.2**		

As seen in Table 34, participants felt moderately strongly about their conceptual knowledge of culture (M = 3.87). They were least likely to endorse the item "I know about the economic systems in some other countries" (M = 3.41) and most likely to endorse the item "I have knowledge of different religions (other than my own)" (M = 4.38). The reliability of this scale was moderate (α = .75).

However the item "I have knowledge of different religions (other than my own)" showed a very low item-total correlation that suggests it may not cohere with the other items in the scale. Moreover, removing this item would increase the reliability from .75 to .84. Hence, future researchers should consider removing this item.

3.1.6 Emotional Stability and Conscientiousness

The next scale tapped emotional stability and conscientiousness, as shown in Table 35.

Table 35. Descriptive statistics and reliabilities – Emotional Stability and Conscientiousness Scale

	Valid N	Mean	Std.Dev.	Skewness	Kurtosis	Item-Total r	Alpha if deleted
Conscientiousness (mean inter-item correlation = .53; alpha = .77)							
I see myself as someone who completes assigned tasks efficiently.	171	4.40	0.63	-0.7	0.2	0.59	0.70
I see myself as someone who perseveres until goals are successfully reached.	171	4.32	0.70	-1.0	2.3	0.69	0.58
My coworkers/peers view me as someone who is reliable and can be depended on.	171	4.41	0.76	-1.5	2.9	0.54	0.76
Conscientiousness (Index)	**171**	**4.38**	**0.57**	**-0.9**	**1.2**		
Emotional Stability (mean inter-item correlation = .59; alpha = .81)							
I have the emotional stability needed to be successful in my work.	170	4.42	0.69	-1.3	2.3	0.63	0.76
I see myself as someone who handles stress well.	171	4.25	0.82	-1.3	2.3	0.69	0.71
I see myself as someone who remains controlled in tense situations.	171	4.34	0.66	-0.6	-0.1	0.67	0.73
Emotional stability (Index)	**171**	**4.34**	**0.62**	**-0.9**	**1.0**		

As seen in Table 35, participants felt that they were highly conscientious (M = 4.38) and emotionally stable (M = 4.34). The reliability of both subscales was moderately high (α = .77 & .81). Most items were moderately negatively skewed and somewhat leptokurtic, indicating that most participants rated themselves quite highly on most of the items.

3.1.7 Global Transformational Leadership

The next items were related to global transformational leadership, as shown in Table 36.

Table 36. Descriptive statistics and reliabilities – Global Transformational Leadership Scale

	Valid N	Mean	Std.Dev.	Skewness	Kurtosis	Item-Total r	Alpha if deleted
Global Transformational Leadership (mean inter-item correlation = .44; alpha = .82)							
Communicates a clear and positive vision of how goals will be accomplished.	170	4.10	0.69	-0.6	0.7	0.63	0.78
Give encouragement and recognition to team members.	171	4.32	0.76	-1.2	2.0	0.60	0.79
Foster trust, involvement and cooperation among team members.	171	4.29	0.68	-0.9	2.0	0.65	0.78
Encourage thinking about problems in new ways and question assumptions.	171	4.20	0.81	-1.1	1.3	0.54	0.80
Clear about my values and practise what I preach.	171	4.25	0.74	-0.7	0.1	0.58	0.79
Inspire others by being highly competent.	171	4.06	0.76	-1.0	1.8	0.52	0.80
Global Transformational Leadership (Index)	**171**	**4.20**	**0.53**	**-0.9**	**2.7**		

As seen in Table 36, participants were highly confident in their global transformational leadership ($M = 4.20$). They agreed most strongly with the item regarding giving encouragement and recognition to team members ($M = 4.32$) and least strongly with the item referring to inspiring others by being highly competent. However, all of the item means were quite high (i.e., > 4.00). The overall global transformational leadership score was slightly leptokurtic with a slight bunching around the mean. The reliability of the scale was high ($\alpha = .82$).

3.1.8 Influence and Persuasion

A set of items from the Upward Influence Scale (Mael, 1989) captured perceived influence and persuasion abilities.

Table 37. Descriptive statistics and reliabilities – Upward Influence Scale

	Valid N	Mean	Std.Dev.	Skewness	Kurtosis	Item-Total r	Alpha if deleted
Influence & Persuasion (mean inter-item correlation = .54; alpha = .82)							
I get along well with people from outside of my organization.	171	4.34	0.61	-0.5	0.3	0.60	0.80
My word carries weight with people outside of my organization.	171	3.88	0.77	-0.3	-0.3	0.73	0.74
I get what I ask for when dealing with people outside of my organization.	170	3.76	0.68	-0.6	0.6	0.58	0.81
I am well respected by people outside of my organization.	171	4.04	0.72	-0.2	-0.5	0.69	0.75
Influence & Persuasion (Index)	171	4.00	0.56	-0.3	0.0		

As can be seen in Table 37, participants rated themselves as moderately high in influence and persuasion ($M = 4.00$). The lowest rated item was "I get what I ask for when dealing with people outside of my organization" ($M = 3.76$). The highest rated item was "I get along well with people from outside of my organization" ($M = 4.34$). All of the items were normally distributed and the reliability of the scale was good ($\alpha = .82$).

3.1.9 Multicultural Personality Questionnaire

The next scale was the Multicultural Personality Questionnaire, as shown in Table 38.

Table 38. Descriptive statistics and reliabilities – Multicultural Personality Questionnaire

I see myself as someone who…	Valid N	Mean	Std.Dev	Skewness	Kurtosis	Item-Total r	Alpha if deleted
Cultural Empathy subscale (mean inter-item correlation = .30; alpha = .88)							
Understands other people's feelings.	171	3.63	0.89	-0.3	-0.2	0.62	0.86
Tries to understand other people's behaviour.	171	3.64	0.95	-0.4	-0.2	0.61	0.86
Takes other people's habits into consideration.	169	3.44	0.85	-0.3	-0.1	0.54	0.87
Finds it hard to empathize with others. (Rev)	171	3.98	1.07	-1.0	0.5	0.26	0.88
Sympathizes with others.	171	3.54	1.08	-0.4	-0.5	0.59	0.86
Has problems assessing relationships. (Rev)	170	3.75	1.01	-0.5	-0.3	0.08	0.88
Is attentive to facial expressions.	171	3.75	0.87	-0.4	-0.1	0.57	0.87
Asks personal questions.	171	3.37	0.99	-0.3	-0.3	0.45	0.87
Enjoys other people's stories.	168	3.91	0.87	-0.8	1.0	0.53	0.87
Remembers what other people have said.	171	3.69	1.01	-0.5	-0.4	0.26	0.88

I see myself as someone who…	Valid N	Mean	Std.Dev	Skewness	Kurtosis	Item-Total r	Alpha if deleted
Is able to voice other people's thoughts.	171	3.46	0.96	-0.5	0.2	0.49	0.87
Is a good listener.	170	3.95	0.84	-0.6	0.3	0.50	0.87
Notices when someone is in trouble.	171	3.84	0.78	-0.1	-0.7	0.62	0.86
Has an insight into human nature.	170	3.51	0.99	-0.3	-0.4	0.56	0.87
Senses when others get irritated.	171	3.87	0.76	-0.7	0.9	0.65	0.86
Sets others at ease.	170	3.54	0.81	-0.4	0.6	0.50	0.87
Pays attention to the emotions of others.	171	3.63	0.91	-0.3	-0.2	0.69	0.86
Enjoys getting to know others profoundly.	171	3.39	0.97	-0.1	-0.6	0.56	0.87
Cultural Empathy subscale (Index)	**171**	**3.66**	**0.52**	**0.1**	**-0.3**		
Emotional stability subscale (mean inter-item correlation = .23; alpha = .85)							
Is nervous. (Rev)	171	4.09	0.93	-0.9	0.2	0.52	0.84
Is not easily hurt.	171	3.33	1.10	-0.4	-0.5	0.49	0.84
Suffers from conflicts with others. (Rev)	169	4.11	0.86	-0.8	0.4	0.51	0.84
Is afraid to fail. (Rev)	170	3.17	1.20	-0.3	-0.9	0.39	0.84
Keeps calm when difficulties arise.	170	3.86	0.84	-0.5	0.2	0.54	0.84
Takes it for granted that things will turn out alright.	170	2.73	1.13	0.0	-1.0	-0.07	0.86
Radiates calm.	171	3.31	1.02	-0.1	-0.5	0.36	0.84
Considers problems solvable.	170	3.98	0.84	-0.8	1.0	0.36	0.84
Is timid. (Rev)	171	4.09	1.00	-1.2	1.1	0.42	0.84
Is under pressure. (Rev)	171	3.23	1.14	-0.3	-0.9	0.41	0.84
Can put setbacks in a perspective.	171	3.50	0.81	-0.3	-0.2	0.43	0.84
Is sensitive to criticism. (Rev)	171	3.35	1.15	-0.2	-0.8	0.55	0.83
Has ups and downs. (Rev)	170	2.65	1.02	0.1	-0.6	0.36	0.84
Forgets setbacks easily.	168	3.09	1.03	0.0	-0.4	0.35	0.84
Is self-confident.	171	3.87	0.90	-0.8	1.0	0.55	0.84
Gets upset easily. (Rev)	170	3.86	1.05	-0.8	0.0	0.63	0.83
Worries. (Rev)	171	3.49	1.19	-0.5	-0.7	0.66	0.83
Tends to feel lonely. (Rev)	169	3.89	1.13	-1.0	0.4	0.42	0.84
Is insecure. (Rev)	171	4.12	1.04	-1.1	0.6	0.53	0.84
Has a solution for every problem.	170	3.11	0.97	-0.2	-0.4	0.26	0.85
Emotional stability subscale (Index)	**171**	**3.54**	**0.52**	**-0.4**	**0.6**		

I see myself as someone who…	Valid N	Mean	Std.Dev	Skewness	Kurtosis	Item-Total r	Alpha if deleted
Flexibility subscale (mean inter-item correlation = .21; alpha = .82)							
Likes vacations that involve "roughing it" (such as camping trips).	171	3.74	1.19	-0.8	0.0	0.27	0.82
Avoids adventure. (Rev)	170	4.50	0.73	-1.5	1.8	0.47	0.81
Changes easily from one activity to another.	171	3.88	0.81	-0.3	-0.4	0.05	0.83
Avoids surprises. (Rev)	170	3.36	1.11	-0.3	-0.6	0.55	0.80
Likes to work on his/her own. (Rev)	171	2.51	1.02	0.3	-0.3	0.36	0.81
Dislikes travelling. (Rev)	171	4.59	0.84	-2.3	5.2	0.38	0.81
Wants to know exactly what will happen. (Rev)	171	2.56	1.10	0.3	-0.9	0.24	0.82
Functions best in a familiar setting. (Rev)	170	2.71	1.04	0.1	-0.7	0.63	0.80
Works mostly according to a strict plan of action. (Rev)	171	3.11	1.07	-0.1	-0.6	0.52	0.81
Feels uncomfortable in a different culture. (Rev)	170	4.08	0.96	-0.9	0.2	0.30	0.82
Works according to plan. (Rev)	170	2.47	0.86	0.3	0.0	0.46	0.81
Likes routine. (Rev)	170	2.71	1.08	0.2	-0.7	0.56	0.80
Has fixed habits. (Rev)	171	2.99	0.97	0.1	-0.4	0.60	0.80
Works according to strict rules. (Rev)	171	2.99	1.08	0.2	-0.7	0.46	0.81
Has a need for change.	170	2.99	1.07	0.0	-0.7	0.26	0.82
Seeks challenges.	171	3.76	0.94	-0.7	0.5	0.26	0.82
Enjoys unfamiliar experiences.	171	3.40	1.09	-0.3	-0.6	0.34	0.82
Looks for regularity in life. (Rev)	171	2.95	1.03	0.1	-0.5	0.64	0.80
Flexibility subscale (Index)	**171**	**3.29**	**0.50**	**-0.3**	**0.3**		
Openmindedness subscale (mean inter-item correlation = .26; alpha = .86)							
Is interested in other cultures.	171	3.58	1.19	-0.6	-0.5	0.67	0.85
Is fascinated by other people's opinions.	171	3.38	1.07	-0.4	-0.4	0.68	0.85
Is looking for new ways to attain his/her goal.	170	3.68	0.99	-0.6	0.1	0.45	0.86
Is curious.	171	1.86	0.84	0.9	0.8	-0.49	0.89
Finds other religions interesting.	169	3.14	1.31	-0.1	-1.1	0.60	0.85
Tries out various approaches.	171	3.60	0.81	-0.4	0.4	0.51	0.86
Is intrigued by differences.	171	3.58	1.01	-0.4	-0.4	0.62	0.85
Starts a new life easily.	171	3.40	1.02	-0.2	-0.5	0.42	0.86
Gets involved in other cultures.	171	2.80	1.22	0.2	-0.9	0.76	0.84
Has a feeling for what is appropriate in a specific culture.	170	3.36	0.99	-0.3	-0.3	0.49	0.86

I see myself as someone who…	Valid N	Mean	Std.Dev	Skewness	Kurtosis	Item-Total r	Alpha if deleted
Seeks contact with people from a different background.	171	3.11	1.13	-0.1	-0.8	0.66	0.85
Has a broad range of interests.	170	4.05	0.90	-0.9	0.7	0.45	0.86
Puts his or her own culture in a perspective.	170	3.20	0.98	-0.1	-0.4	0.43	0.86
Is open to new ideas.	170	4.04	0.73	-0.2	-0.5	0.60	0.85
Is fascinated by new technological developments.	171	3.95	1.06	-0.8	-0.2	0.41	0.86
Likes to imagine solutions for problems.	169	3.67	0.94	-0.4	-0.1	0.49	0.86
Is a trendsetter.	171	2.54	1.08	0.2	-0.6	0.38	0.86
Reads a lot.	170	3.25	1.35	-0.2	-1.1	0.36	0.86
Openmindedness subscale (Index)	**171**	**3.34**	**0.58**	**0.0**	**-0.3**		
Social Initiative subscale (mean inter-item correlation =.31 ; alpha =.88)							
Takes initiative.	171	3.85	0.87	-0.6	0.3	0.59	0.86
Makes contacts easily.	170	3.40	1.03	-0.5	0.2	0.54	0.86
Finds it difficult to make contacts. (Rev)	171	4.02	0.93	-0.7	-0.2	0.42	0.87
Keeps to the background. (Rev)	171	3.50	1.10	-0.3	-0.6	0.56	0.86
Is inclined to speak out.	170	3.41	1.05	-0.4	-0.2	0.57	0.86
Leaves the initiative to others to make contacts. (Rev)	171	3.73	1.07	-0.5	-0.5	0.52	0.86
Takes the lead.	171	3.64	0.95	-0.5	0.1	0.70	0.86
Is a slow starter. (Rev)	171	4.01	0.95	-0.8	0.0	0.46	0.87
Is always busy.	171	3.75	1.07	-0.6	-0.2	0.28	0.88
Is easy-going among groups.	171	3.80	0.86	-0.8	0.7	0.37	0.87
Easily approaches other people.	171	3.56	0.99	-0.6	-0.1	0.53	0.86
Knows how to act in social settings.	171	3.89	0.80	-0.4	-0.1	0.47	0.87
Likes to speak in public.	170	3.25	1.26	-0.4	-0.8	0.55	0.86
Tends to wait and see. (Rev)	171	3.37	1.01	-0.3	-0.5	0.44	0.87
Likes action.	171	4.13	0.86	-1.3	2.2	0.50	0.87
Is often the driving force behind things.	171	3.30	0.98	-0.2	-0.2	0.60	0.86
Leaves things as they are. (Rev)	171	3.60	0.88	-0.2	-0.1	0.39	0.87
Social Initiative subscale (Index)	**171**	**3.66**	**0.56**	**-0.2**	**0.5**		

As can be seen in Table 38, participants scored moderately on all five subscales of the MPQ (*M*s ranged from 3.29 to 3.66). Participants were least likely to endorse the item "is curious" ($M = 1.86$) and most likely to indicate that they liked travelling ($M = 4.59$). The latter item was also quite negatively skewed and leptokurtic. Almost 75% of participants indicated that this was extremely

true of them. Considering that travel is a requirement for CF personnel, this fondness for travel is not surprising.

All of the subscales were very reliable (alphas ranged from .82 to .88), although several items in the scale showed low item-total correlations. Specifically, from the cultural empathy subscale, the item "Finds it hard to empathize with others," "Has problems assessing relationships," "Remembers what other people have said," and "Pay attention to the emotions of others" were all problematic. Within the emotional stability subscale, the item "Takes it for granted that things will turn out alright" had a very low and negative correlation with the total scale. Lastly, an item on the social initiative subscale was also problematic, namely "Is always busy" had a low item-total correlation.

3.1.10 Negotiating with Others

The next set of items tapped skills related to negotiating with others, as shown in Table 39.

Table 39. Descriptive statistics and reliabilities – Negotiating with Others Subscale

	Valid N	Mean	Std.Dev.	Skewness	Kurtosis	Item-Total r	Alpha if deleted
Negotiating with others subscale (mean inter-item correlation = .37; alpha = .78)							
I am willing to negotiate with people outside of my organization.	170	4.32	0.80	-1.6	3.9	0.60	0.71
I am willing to bargain with people outside of my organization for supplies or resources.	171	4.05	0.92	-1.2	1.6	0.48	0.73
I apply culture-specific rules for negotiation.	171	3.37	1.11	-0.5	-0.1	0.43	0.76
I am willing to reach a compromise situation with people outside of my organization that would make both sides pleased with the result.	171	4.32	0.72	-1.1	2.4	0.58	0.71
I am willing to form mutually beneficial partnerships with people outside of my organization.	171	4.35	0.74	-1.2	2.1	0.52	0.72
I would use different tactics when negotiating with people from different backgrounds.	171	3.80	0.99	-0.8	0.2	0.49	0.73
Negotiation (Index)	**171**	**4.03**	**0.60**	**-0.8**	**2.8**		

As can be seen in Table 39, participants were highly confident in their ability to negotiate with others ($M = 4.03$). They were least likely to endorse the idea that they "apply culture-specific rules for negotiation" ($M = 3.37$) and most likely to feel that they were "willing to form mutually beneficial partnerships with people outside of my organization" ($M = 4.35$). The data were normally distributed around the mean with a slight increase in the number of participants falling at the mean causing the data to be somewhat leptokurtic. The scale was only moderately reliable ($\alpha = .78$), which was much lower than the reliability reported in the original study.

3.1.11 Relationship Building

The next set of items tapped skills related to relationship building, as shown in Table 40.

Table 40. Descriptive statistics and reliabilities – Relationship Building Subscale

It is important for me to…	Valid N	Mean	Std.Dev.	Skewness	Kurtosis	Item-Total r	Alpha if deleted
Relationship Building (mean inter-item correlation = .52; alpha = .86)							
Gain the trust of people outside of my organization.	170	4.27	0.74	-0.8	0.4	0.77	0.81
Gain respect of people outside of my organization.	169	4.22	0.77	-0.6	-0.3	0.72	0.82
Gain credibility in the eyes of people outside of my organization.	169	4.34	0.77	-1.2	1.9	0.75	0.81
Change other people's perceptions of my organization.	169	4.02	0.81	-0.7	0.6	0.43	0.87
Convince people outside of my organization to respect my opinion.	170	3.82	0.87	-0.5	-0.4	0.54	0.85
Show people outside of my organization that I would not betray their trust in me.	168	4.36	0.74	-1.3	2.7	0.68	0.82
Relationship Building (Index)	**170**	**4.17**	**0.59**	**-0.8**	**0.8**		

As can be seen in Table 40, participants rated themselves as being quite strong at relationship building ($M = 4.17$). They felt that it was most important to "show people outside of my organization that I would not betray their trust in me" ($M = 4.36$). On the other hand, participants felt that it was least important to "convince people outside of my organization to respect my opinion" ($M = 3.82$). The relationship building scale had very good reliability ($\alpha = .86$).

3.1.12 Resilience Scale

Results for the resilience scale are shown in the next table.

Table 41. Descriptive statistics and reliabilities – Resilience Scale

	Valid N	Mean	Std.Dev.	Skewness	Kurtosis	Item-Total r	Alpha if deleted
Resilience scale (mean inter-item correlation = .39; alpha = .86)							
I am able to adapt when changes occur.	171	4.32	0.61	-0.6	1.1	0.66	0.83
I can deal with whatever comes my way.	171	4.27	0.71	-0.9	1.3	0.64	0.83
I try to see the humorous side of things when I am faced with problems.	171	4.32	0.76	-1.0	0.8	0.44	0.85
Having to cope with stress can make me stronger.	171	4.13	0.82	-1.0	1.2	0.49	0.85
I tend to bounce back after illness, injury, or other hardships.	170	4.31	0.70	-0.9	1.2	0.64	0.83
I believe I can achieve my goals, even if there are obstacles.	171	4.42	0.61	-0.7	0.4	0.58	0.84
Under pressure, I stay focused and think clearly.	171	4.25	0.76	-1.2	1.8	0.58	0.84
I am not easily discouraged by failure.	171	3.82	1.01	-0.9	0.4	0.51	0.85
I think of myself as a strong person when dealing with life's challenges and difficulties.	171	4.34	0.76	-1.3	2.4	0.66	0.83
I am able to handle unpleasant or painful feelings like sadness, fear and anger.	171	4.14	0.87	-1.5	3.0	0.49	0.85
Resilience (Index)	**171**	**4.23**	**0.50**	**-0.9**	**2.2**		

As seen in Table 41, participants were highly confident in their resilience (M = 4.23). They were most likely to endorse the belief that they could achieve their goals, even if there are obstacles (M = 4.42). The only item whose mean was less than 4 was the item "I am not easily discouraged by failure" (M = 3.82). The reliability of the scale was quite high (α = .86), which was consistent with past research.

3.1.13 Self-Efficacy Scale

Results for the self-efficacy scale are shown in Table 42.

Table 42. Descriptive statistics and reliabilities – Self-Efficacy Scale

	Valid N	Mean	Std.Dev.	Skewness	Kurtosis	Item-Total r	Alpha if deleted
Self-efficacy (mean inter-item correlation = .51; alpha = .91)							
I can always manage to solve difficult problems if I try hard enough.	170	4.10	0.73	-0.5	0.2	0.68	0.90
If someone opposes me, I can find the means and ways to get what I want.	171	3.44	0.90	-0.8	0.6	0.48	0.91
It is easy for me to stick to my aims and accomplish my goals.	171	3.77	0.83	-0.5	0.2	0.59	0.90
Thanks to my resourcefulness, I know how to handle unforeseen situations.	171	3.92	0.84	-0.6	0.3	0.71	0.90
I am confident that I could deal effectively with unexpected events.	170	4.08	0.80	-0.8	0.8	0.78	0.89
I can solve most problems if I invest the necessary effort.	170	4.11	0.75	-0.8	0.8	0.62	0.90
I can remain calm when facing difficulties because I can rely on my coping abilities.	171	3.99	0.78	-0.8	1.5	0.63	0.90
When I am confronted with a problem, I can usually find several solutions.	171	3.93	0.77	-0.7	0.9	0.69	0.90
If I am in trouble, I can usually think of a solution.	171	4.02	0.75	-0.5	0.0	0.77	0.89
I can usually handle whatever comes my way.	171	4.05	0.74	-0.3	-0.4	0.79	0.89
Self-efficacy (Index)	**171**	**3.94**	**0.58**	**-0.6**	**1.0**		

As seen in Table 42, participants rated themselves as moderately high in self-efficacy ($M = 3.94$). They were most likely to believe that they could "solve most problems if (they) invest the necessary effort" ($M = 4.11$) and least likely to believe that if someone opposed them, they could find the means and ways to get what they want ($M = 3.44$). For the most part, the data for this scale were normally distributed with respect to skewness and kurtosis. The reliability of the scale was high ($\alpha = .91$).

3.1.14 Self-Leadership Questionnaire

Results for the self-leadership questionnaire are shown in Table 43.

Table 43. Descriptive statistics and reliabilities – Self-Leadership Questionnaire

	Valid N	Mean	Std.Dev.	Skewness	Kurtosis	Item-Total r	Alpha if deleted
Evaluating beliefs & assumptions subscale (mean inter-item correlation = .55; alpha = .83)							
I think about my own beliefs and assumptions whenever I encounter a difficult situation.	171	3.43	1.04	-0.4	-0.3	0.70	0.77
I try to mentally evaluate the accuracy of my own beliefs about situations I am having problems with.	171	3.46	1.01	-0.5	0.1	0.70	0.76
I openly articulate and evaluate my own assumptions when I have a disagreement with someone else.	170	3.56	0.88	-0.2	-0.4	0.50	0.85
I think about and evaluate the beliefs and assumptions I hold.	171	3.47	0.99	-0.3	-0.3	0.74	0.75
Evaluating beliefs & assumptions (Index)	**171**	**3.48**	**0.80**	**-0.1**	**-0.2**		
Self-observation subscale (mean inter-item correlation = .56; alpha = .83)							
I make a point to keep track of how well I'm doing at work or at school.	171	3.56	1.06	-0.6	0.0	0.73	0.76
I usually am aware of how well I'm doing as I perform an activity.	170	3.83	0.80	-0.7	1.0	0.53	0.84
I pay attention to how well I'm doing in my work.	171	3.91	0.93	-1.0	1.1	0.73	0.76
I keep track of my progress on projects I am working on.	171	3.67	0.92	-0.4	-0.2	0.68	0.78
Self-observation (Index)	**171**	**3.74**	**0.76**	**-0.9**	**1.3**		

As seen in Table 43, participants scored moderately on evaluating beliefs and assumptions (M = 3.48) and slightly higher on self-observation (M = 3.74). The data for both scales were normally distributed with regard to skewness. The self-observation subscale was slightly leptokurtic, indicating that there was a slight bunching of scores around the mean. The reliability of both scales (α = .83 for both) was slightly higher than what was previously found.

3.1.15 Self-Monitoring Scale

Results for the self-monitoring questionnaire are shown in Table 44.

Table 44. Descriptive statistics and reliabilities – Self-Monitoring Scale

	Valid N	Mean	Std.Dev.	Skewness	Kurtosis	Item-Total r	Alpha if deleted
Self-Monitoring (mean inter-item correlation = .41; alpha = .83)							
In social situations, I have the ability to alter my behaviour if I feel that something else is called for.	170	4.02	0.79	-1.1	2.1	0.52	0.81
I have the ability to control the way I come across to people, depending on the impression I wish to give them.	171	3.87	0.97	-0.9	0.5	0.64	0.79
When I feel that the image I am portraying isn't working, I can readily change it to something that does.	171	3.62	0.84	-0.4	-0.1	0.61	0.79
I have trouble changing my behaviour to suit different people and different situations. (Rev)	171	3.84	1.00	-0.8	0.0	0.60	0.79
I have found that I can adjust my behaviour to meet the requirements of any situation I find myself in.	170	4.13	0.81	-0.9	1.0	0.57	0.80
Even when it might be to my advantage, I have difficulty putting up a good front. (Rev)	171	3.63	1.00	-0.3	-0.7	0.49	0.81
Once I know what the situation calls for, it's easy for me to regulate my actions accordingly.	170	4.18	0.73	-1.0	2.3	0.56	0.80
Self-Monitoring (Index)	**170**	**3.90**	**0.62**	**-0.6**	**0.9**		

As seen in Table 44, participants were moderately high in self-monitoring ($M = 3.90$). Participants were most likely to believe that "once I know what the situation calls for, it's easy for me to regulate my actions accordingly" ($M = 4.18$). They were least likely to believe that "when I feel that the image I am portraying isn't working, I can readily change it to something that does" ($M = 3.62$) and "even when it might be to my advantage, I have difficulty putting up a good front (rev)" ($M = 3.63$). The scale showed good reliability ($\alpha = .83$).

3.1.16 Tolerance for Uncertainty Subscale

Results for the tolerance for uncertainty scale are shown in Table 45.

Table 45. Descriptive statistics and reliabilities – Tolerance for Uncertainty Subscale

	Valid N	Mean	Std.Dev.	Skewness	Kurtosis	Item-Total r	Alpha if deleted
Tolerance for Uncertainty (mean inter-item correlation = .32; alpha = .77)							
I like to have a plan for everything and a place for everything. (Rev)	171	2.42	1.08	0.5	-0.5	0.58	0.72
I prefer to socialize with familiar friends because I know what to expect from them. (Rev)	169	2.38	1.01	0.6	-0.2	0.54	0.73
I don't like to go into a situation without knowing what I can expect from it. (Rev)	170	2.51	1.11	0.5	-0.7	0.52	0.73
I find that establishing a consistent routine enables me to enjoy life more. (Rev)	170	2.46	0.99	0.5	-0.5	0.49	0.74
I believe orderliness and organization are amongst the most important characteristics a person could have. (Rev)	169	2.48	1.05	0.4	-0.5	0.42	0.75
I feel uncomfortable when I don't understand the reason why an event occurred in my life. (Rev)	170	2.99	1.20	0.0	-0.9	0.42	0.75
I feel uncomfortable when someone's meaning or intention is unclear to me. (Rev)	170	2.64	1.01	0.4	-0.4	0.46	0.74
Tolerance for Uncertainty (Overall Index)	**170**	**2.56**	**0.69**	**0.4**	**-0.3**		

As seen in Table 45, participants rated themselves as somewhat low in their tolerance for uncertainty ($M = 2.56$). Considering that all of the participants were CF members who are generally used to a structured environment, this somewhat low score on tolerance for uncertainty is not surprising. The scale was moderate in reliability ($\alpha = .77$).

Correlations among all of the theoretically related scales were calculated and can be found in Annex E.

3.2 Structure of the IMPPaCTS Scale

The original IMPPaCTS scale was constructed to contain several related sets of competencies presumed to underlie the ability to work effectively in diverse cultural environments and with a wide range of people. In accordance with the IMPPaCTS acronym, we had initially posited that individual differences, motivation, professionalism, problem-solving, thinking skills and social skills might all influence 3C when working in diverse environments. To instantiate these assumptions, we had created scale items intended to capture the critical elements of 3C within these 7 dimensions.

Next, it was important to explore the actual factor structure of these items, and to examine the extent to which the data provided by participants were congruent with the proposed underlying

structure. As this effort represented the first attempt to determine the underlying structure, exploratory rather than confirmatory factor analysis was deemed to be the appropriate analysis.

Prior to the factor analysis, outliers (i.e., $z > |3.29|$, Tabachnick & Fidell, 2001) were substituted with the next less extreme value (Kline, 1998). Furthermore, in order to maximize the sample size, where data points were missing, sample means were substituted (Cohen & Cohen, 1983). Both of these practices are common methods for cleaning up data in preparation for analysis.

Although the conventional "rule of thumb" for factor analysis is commonly identified as a 10:1 ratio of participants to items, there is also good agreement in the literature that researchers commonly rely on much smaller ratios, with one meta-analysis of more than 300 studies showing only a 2:1 ratio used by 15% of researchers using factor analysis (Costello & Osborne, 2005). Given that Version 1 of the IMPPaCTS scale had 33 items and that there were 171 participants in this study, a ratio of approximately 5:1 was used to conduct these analyses. This suggests that additional validation of the structure emerging from these data would be ideal.

Using the Comprehensive Exploratory Factor Analysis program (CEFA; Browne, Cudeck, Tateneni, & Mels, 1998), exploratory factor analysis was conducted to explore the structure of the IMPPaCTS scale by comparing 1, 2, 3, 4, 5, 6, 7, and 8 factor models. In conducting the EFAs, the most widely used model-fitting method, Maximum Likelihood (ML), was used, as well as an oblique rotation to aid in interpreting the simple structure of the factors. As it seemed reasonable to expect relationships among the various factors, oblique (rather than orthogonal) rotations were used. The 7-factor solution demonstrated the most acceptable and meaningful structure, χ^2 (318 d.f.) = 438.97. The low root-mean-square error of approximation (RMSEA) showed that the majority of the data fit the 7-factor structure very well (RMSEA =.047, with a confidence interval ranging from .036 to .058). However, two items did not load in a way that was conceptually meaningful (i.e., loading $\geq .32$), so were excluded from further analyses. These were "I have a strong moral compass that governs how I act" and "I'm good at understanding how another person might see the world."

This 7-factor structure showed the best properties of all the models: however, the exploratory factor analysis showed that the best fit required some of the items to move to different IMPPaCTS subscales. For example, as might have been predicted, individual difference items did not load onto a single dimension, but were meaningfully distributed through a range of other IMPPaCTS dimensions. Upon re-examination of the newly formed subscales, it became clear that with shifts in items, the conceptual content of some of the subscales had also shifted requiring re-examination of the titles of some of the subscales. As we believed that the shifts resulted in conceptually meaningful (and mostly coherent) factors, we chose to be guided by the exploratory factor analysis and to work to redefine the factors that emerged from it.

The factors (and subscales) that emerged from this analysis were as follows:

- Influence/Leadership - The items forming this subscale were related to leadership implicitly, but seemed to have a strong component of influence. The items seemed to emphasize the tendency to make one's views known and to get others to comply with one's will. Hence, the subscale was relabelled influence/leadership from the original professionalism/leadership label in Version 1 of the scale.
- Motivation – The items loading on this item seemed to capture the tendency to be oriented to act as well as to be willing to engage others.
- People Skills – Items that loaded on this factor seemed to capture the ability to interact positively with other people (including those from diverse backgrounds) and to enjoy that interaction. After having adjusted the subscale labels to more clearly reflect the conceptual

context in other subscales, we relabelled the social skill subscale (Version 1) to "people skills" (which also preserved the IMPPaCTS acronym).

- Problem Management/Adaptability - The items loading on this dimension seemed related to problem-solving (as posited in Version 1) but did not have the flavour of the formal term and also showed a strong emphasis on adaptability and adjusting as necessary. Given this, we relabelled the subscale as tapping problem management and adaptability.
- Cultural Knowledge – All of these items related to understanding various aspects of other cultures such as religion, politics, social norms and decision-making.
- Thinking skills - The items making up this factor seemed to emphasize divergent thinking skills and the ability to approach problems from various angles.
- Social monitoring - The factor that emerged seemed best described as representing the ability to adapt one's behaviour to best suit the situation or the people with whom one is working. This factor is closely related to self-monitoring, a common competence noted in the 3C literature (see Brown & Adams, 2011) but is framed as social monitoring in the IMPPaCTS scale in order to emphasize the social context in which monitoring is assumed to be relevant.

The relabelled subscales and the structure emerging from the exploratory factor analysis (specifically, standardized factor loadings after rotation) are shown in Table 46.[5]

Table 46. Results of a 7-factor solution – Standardized factor loadings

Item #	Item Wording	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7
INFLUENCE/LEADERSHIP								
32	I can usually get people to do what I want them to do.	**0.68**	0.06	0.09	-0.01	0.05	0.09	0.10
33	If I'm in a group of people, I make sure my views are known.	**0.52**	0.13	-0.04	-0.25	0.10	0.09	0.13
15	I get people to listen to me when I know what needs to be done.	**0.45**	**0.34**	0.12	0.06	0.08	-0.11	0.14
MOTIVATION								
8	I like to get things done quickly and efficiently.	0.01	**0.73**	0.05	0.04	-0.12	0.06	-0.08
9	I'm a "get it done" kind of person.	0.15	**0.71**	0.00	0.17	0.01	-0.08	-0.07
5	I feel more comfortable when I have a clear plan.	-0.07	**0.53**	-0.12	-0.22	-0.01	-0.03	0.09
10	I'm constantly looking for new things to learn.	-0.18	**0.41**	0.02	-0.02	**0.32**	-0.09	**0.34**
19	I am confident in my ability to solve most problems that come my way.	0.18	**0.39**	0.09	0.17	0.02	0.24	0.08
14	It is important for me to establish cooperation and trust when working with others.	0.10	**0.36**	0.24	0.04	-0.11	0.11	0.20

Item #	Item Wording	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7
PEOPLE SKILLS								
1	I am generally an outgoing person.	0.29	-0.08	**0.53**	0.12	0.15	-0.05	0.02
6	I like interacting with different types of people from different backgrounds.	-0.14	0.14	**0.42**	-0.25	0.29	**0.32**	0.08
31	I have strong communication skills.	**0.34**	0.04	**0.40**	0.07	0.09	-0.02	0.23
2	I tend to get along very well with others.	0.13	0.10	**0.35**	0.31	-0.10	0.20	-0.04
27	What's right for me is not necessarily right for everyone in the world.	-0.13	0.12	**0.35**	0.09	-0.21	0.06	0.23
PROBLEM MANAGEMENT/ADAPTABILITY								
4	I keep my emotions in check when tensions are running high.	-0.20	0.10	0.03	**0.66**	0.02	0.12	0.17
11	I tend to be seen as a natural leader by others.	**0.33**	0.05	0.18	**0.37**	0.21	0.01	-0.01
12	I can deal effectively with any challenge that I encounter.	0.17	0.28	0.04	**0.35**	0.13	0.24	0.04
16	I am comfortable managing conflict.	0.07	0.25	-0.01	**0.35**	0.26	-0.03	0.17
CULTURAL KNOWLEDGE								
23	I understand how the economy works in other countries.	0.16	-0.13	-0.05	0.11	**0.84**	-0.01	-0.07
21	I know about the cultural values and religious beliefs of other cultures.	-0.04	0.10	0.12	-0.04	**0.78**	0.06	-0.03
24	I follow international politics.	0.04	0.01	-0.17	0.00	**0.72**	-0.01	-0.01
20	I am aware of the different factors that influence decision making in other cultures.	-0.02	-0.08	0.15	-0.02	**0.68**	0.08	0.00
22	I am aware of some of the different social norms of other cultures.	-0.14	0.08	0.12	-0.02	**0.58**	0.14	0.17
THINKING SKILLS								
26	I try to see things from an angle that's slightly different from other people.	0.02	-0.08	-0.01	0.04	0.01	**0.84**	-0.02
17	I approach problems from many angles to find the best solution.	0.09	0.27	-0.17	0.02	0.23	**0.36**	0.24
3	I'm the kind of person who manages change well.	0.17	0.05	-0.11	0.30	0.10	**0.32**	0.18

Item #	Item Wording	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7
SOCIAL MONITORING								
25	I try to adapt my approach to the person that I'm working with.	0.01	-0.07	0.03	0.05	-0.08	0.03	**0.90**
28	I adjust my behaviour to suit the people I am working with.	0.23	-0.01	-0.08	0.01	0.02	0.01	**0.56**
18	When a conflict arises, I am confident in my ability to find a compromise that everyone can agree on.	0.24	0.18	0.01	0.11	0.05	0.09	**0.41**
30	I know how to connect with most people.	0.07	0.05	**0.36**	0.12	0.17	-0.06	**0.37**
7	I seek opportunities to know more about other people.	0.00	0.02	0.17	-0.07	0.29	0.11	**0.35**
EXCLUDED								
19	I have a strong moral compass that governs how I act.	0.02	0.25	0.01	-0.02	0.09	0.25	-0.03
29	I'm good at understanding how another person might see the world.	0.18	0.13	-0.10	0.09	0.16	0.29	-0.01

Note. Significant factor loadings are highlighted in bold.

Note that from our perspective, this structure is preliminary and tentative and would need to be further explored. Whether or not this factor structure holds up in future iterations of this scale, we felt that using the factor structure to guide the discussion within this paper could help in understanding the relationships that emerged among items and how the items might have been interpreted by the participants (i.e., with which other items they are most closely associated). This would also help guide future revisions of problematic items.

Indeed, Table 46 shows that although the 7-factor structure was the model that best fit the data, some of the items showed significant cross-loadings with other factors. [6] For example, item 30 ("I know how to connect with most people") loaded fairly equally on both the social monitoring factor and the people skills factor. Item 10 ("I am constantly looking for new things to learn") loaded on motivation (as expected) as well as on the social monitoring factor and, unexpectedly, the cultural knowledge factor.

Item 15 ("I get people to listen to me when I know what needs to be done") loaded strongly on the influence/leadership factor, but more weakly on the motivation factor as well.

Item 11 ("I tend to be seen as a natural leader by others") loaded on both the problem management/adaptability factor and on the influence/leadership factor.

Item 6 ("I like interacting with different types of people from different backgrounds") loaded on both the people skills factor and on the factor assessing divergent thinking.

Lastly, item 31 ("I have strong communication skills") loaded on both the expected people skills factor as well as on the influence/leadership factor.

[6] When analyzing the IMPPaCTS structure, upon encountering cross-loadings, we used the highest factor loading to determine the subscale on which to load the item. As we note in further discussions, this may have resulted in some items being paired with factors that were not the most obvious conceptual match.

Overall, then, although the data generally show a fairly good fit to the conceptual structure, not every item loaded discretely onto one factor. This observation seems consistent with the varying levels of relatedness among the different aspects of 3C that are evident in other parts of the data.

It is important to note that another EFA was conducted on the data after removing the two excluded items. This EFA was simply intended to understand whether the two problematic items had influenced the factor structure that emerged. The results and discussion of this analysis can be found in Annex F.

Table 47 displays the correlations among all of the items used in the IMPPaCTS scale.

Table 47. Correlations among the items of the IMPPaCTS Scale

	32	33	15	8	9	5	10	19	14	1	6	31	2	27	4
at I want them to do.															
e sure my views are known.	0.45														
I know what needs to be done.	0.57	0.41													
nd efficiently.	0.19	0.19	0.34												
	0.37	0.20	0.48	0.57											
ave a clear plan.	0.04	0.13	0.19	0.34	0.30										
ngs to learn.	0.20	0.24	0.33	0.31	0.38	0.21									
ve most problems that come my way.	0.45	0.26	0.50	0.46	0.44	0.10	0.46								
cooperation and trust when working with others.	0.35	0.21	0.47	0.34	0.41	0.17	0.37	0.45							
n.	0.43	0.29	0.36	0.11	0.23	-0.07	0.23	0.33	0.29						
es of people from different backgrounds.	0.21	0.20	0.22	0.18	0.18	0.10	0.38	0.31	0.33	0.32					
s.	0.50	0.39	0.50	0.23	0.34	0.02	0.34	0.44	0.45	0.61	0.36				
others.	0.33	0.12	0.34	0.24	0.34	0.02	0.15	0.36	0.35	0.43	0.28	0.40			
arily right for everyone in the world.	0.08	-0.05	0.25	0.18	0.18	0.09	0.09	0.29	0.31	0.12	0.28	0.17	0.32		
n tensions are running high.	0.18	0.03	0.27	0.26	0.34	0.05	0.30	0.38	0.34	0.24	0.13	0.31	0.36	0.27	
der by others.	0.52	0.26	0.51	0.25	0.34	-0.04	0.22	0.44	0.34	0.42	0.24	0.55	0.38	0.17	0.43
allenge that I encounter.	0.45	0.33	0.46	0.37	0.46	0.07	0.35	0.70	0.43	0.34	0.33	0.44	0.43	0.21	0.52
ct.	0.41	0.20	0.43	0.28	0.43	0.07	0.48	0.46	0.34	0.31	0.27	0.42	0.38	0.11	0.43
orks in other countries.	0.36	0.24	0.28	0.01	0.13	-0.06	0.21	0.25	0.10	0.31	0.35	0.30	0.22	-0.04	0.14
and religious beliefs of other cultures.	0.31	0.28	0.30	0.12	0.20	0.09	0.45	0.36	0.23	0.37	0.53	0.40	0.16	0.10	0.22
	0.17	0.21	0.25	0.01	0.12	0.02	0.28	0.18	0.09	0.16	0.29	0.18	0.08	-0.07	0.09
s that influence decision making in other cultures.	0.27	0.21	0.16	0.06	0.10	0.07	0.24	0.23	0.13	0.35	0.49	0.32	0.13	0.06	0.16
nt social norms of other cultures.	0.24	0.21	0.27	0.14	0.24	0.07	0.47	0.37	0.32	0.32	0.54	0.38	0.25	0.12	0.24
hat's slightly different from other people.	0.23	0.14	0.09	0.11	0.07	-0.02	0.17	0.37	0.22	0.15	0.41	0.21	0.28	0.12	0.32
angles to find the best solution.	0.33	0.33	0.37	0.27	0.37	0.23	0.45	0.50	0.43	0.21	0.38	0.40	0.31	0.11	0.32
ges change well.	0.34	0.28	0.35	0.18	0.34	0.05	0.24	0.40	0.31	0.29	0.27	0.34	0.37	0.10	0.46
person that I'm working with.	0.34	0.23	0.36	0.20	0.23	0.12	0.43	0.40	0.41	0.27	0.31	0.46	0.28	0.32	0.40
people I am working with.	0.35	0.32	0.32	0.17	0.26	0.14	0.26	0.33	0.28	0.25	0.20	0.38	0.24	0.27	0.24
dent in my ability to find a compromise that everyone can agree on.	0.48	0.30	0.46	0.31	0.45	0.10	0.34	0.52	0.42	0.32	0.29	0.47	0.33	0.37	0.34
people.	0.40	0.29	0.47	0.22	0.27	0.07	0.40	0.45	0.47	0.48	0.44	0.56	0.47	0.32	0.38
e about other people.	0.31	0.22	0.36	0.16	0.10	0.03	0.42	0.36	0.28	0.30	0.49	0.37	0.17	0.21	0.26
hat governs how I act.	0.16	0.20	0.09	0.27	0.23	0.18	0.23	0.25	0.30	0.11	0.25	0.20	0.26	0.10	0.22
nother person might see the world.	0.18	0.14	0.21	0.25	0.15	0.18	0.30	0.25	0.27	0.16	0.38	0.20	0.29	0.08	0.30

d ($p < .001$). Items falling within the same proposed factor are highlighted in grey.

Table 47 (continued). Correlations among the factors of the IMPPaCTS Scale

	23	*21*	*24*	*20*	*22*	*26*	*17*	*3*	*25*	*28*	*18*	*30*	*7*	*13*	*29*
orks in other countries.															
and religious beliefs of other cultures.	**0.67**														
	0.61	**0.53**													
s that influence decision making in other cultures.	**0.61**	**0.64**	**0.40**												
nt social norms of other cultures.	**0.52**	**0.65**	**0.42**	**0.59**											
hat's slightly different from other people.	**0.25**	**0.33**	0.21	**0.28**	**0.39**										
angles to find the best solution.	**0.35**	**0.47**	**0.34**	**0.32**	**0.45**	**0.45**									
ges change well.	**0.28**	**0.29**	0.25	**0.29**	**0.34**	**0.39**	**0.55**								
person that I'm working with.	0.13	0.21	0.07	0.19	**0.36**	**0.26**	**0.44**	**0.38**							
people I am working with.	0.20	0.20	0.21	0.19	**0.28**	0.16	**0.33**	**0.36**	**0.55**						
ident in my ability to find a compromise that everyone can agree on.	**0.29**	**0.31**	0.17	**0.28**	**0.37**	**0.26**	**0.47**	**0.48**	**0.54**	**0.47**					
people.	**0.36**	**0.39**	**0.29**	**0.32**	**0.38**	0.19	**0.40**	**0.35**	**0.54**	**0.32**	**0.48**				
e about other people.	**0.34**	**0.43**	**0.34**	**0.38**	**0.49**	**0.31**	**0.39**	**0.28**	**0.43**	**0.30**	**0.39**	**0.44**			
hat governs how I act.	0.23	0.25	0.18	0.13	0.20	**0.27**	**0.36**	0.21	0.17	0.19	**0.30**	**0.25**	0.12		
nother person might see the world.	0.23	**0.32**	0.20	**0.27**	**0.32**	**0.36**	**0.43**	**0.32**	**0.33**	0.21	**0.36**	**0.34**	**0.31**	0.19	

d ($p < .001$). Items falling within the same proposed factor are highlighted in grey.

As can be seen in Table 47, the items within the first factor that appeared to tap influence/leadership were significantly correlated with each other. Not surprisingly, the item "I can usually get people to do what I want them to do" (item 32) was most strongly correlated with "I get people to listen to me when I know what needs to be done" (item 15). In fact, item 32 was more strongly correlated with item 15 than with any other item in the scale. Items 32 and 15 were also strongly correlated with item 31 ("I have strong communication skills"). Once again, this is not surprising as one would require strong communication skills in order to be able to influence and/or lead others. Both item 32 and item 15 were strongly correlated with item 11 ("I tend to be seen as a natural leader by others"). This is not surprising as item 11 cross-loaded on the influence/leadership factor.

Within the motivation factor, item 5 ("I feel more comfortable when I have a clear plan") was significantly correlated to only two of the other five items making up the factor. It was also not significantly correlated with any of the other items in the IMPPaCTS scale. Suggestions for revision of this item are also addressed in section 4.2.

Item 19 ("I am confident in my ability to solve most problems that come my way") was significantly correlated with almost every other item in the IMPPaCTS scale. This makes sense as confidence in one's problem management/adaptability skills necessitates being able to communicate (item 31), deal effectively with challenges (item 12), develop a compromise (item 18), and so on. Despite the strong relationships with items on other factors, this item did load uniquely on the motivation factor.

Within the people skills factor, most items were significantly and strongly related with other items on the factor. The one exception, item 27 ("What's right for me is not necessarily right for everyone in the world") was only correlated with item 2 ("I tend to get along very well with others") and item 6 ("I like interacting with different types of people from different backgrounds"). While item 27 did not correlate strongly with many items from most other factors, it did correlate significantly with the items on the social monitoring factor. The same is true of all of the items in the people skills factor. It is not surprising that people skills are closely associated with social monitoring abilities as those who are successfully able to monitor their behaviours (i.e., "I try to adapt my approach to the person that I'm working with," "I know how to connect with most people") are also likely to have strong people skills ("I tend to get along very well with others").

All of the items within the problem management/adaptability factor were strongly correlated with each other. The items on this factor also correlated strongly with items on the motivation factor, which is not surprising as many of the items on the motivation factor assess one's ability to deal with obstacles (e.g., "I am confident in my ability to solve most problems that come my way"). Items on the problem management/adaptability factor were also significantly correlated with most of the items on the thinking skills factor. Again, this is not surprising as divergent thinking (e.g., "I approach problems from many angles to find the best solutions") is necessary for effectively managing problems. Items that loaded on the social monitoring factor were also significantly correlated with items that loaded on the problem management/adaptability factor. As with thinking skills, social monitoring requires flexibility (e.g., "I adjust my behaviour to suit the people I am working with"), which is essential to managing problems. Item 11 ("I tend to be seen as a natural leader by others") was significantly correlated with all of the items on the influence/leadership factor, which is not surprising as it cross-loaded on that factor. Suggestions for future revisions of this item are presented in Section 4.2.

There were strong positive correlations among all of the items included in the conceptual knowledge of culture factor. There was partial overlap between the cultural knowledge items and the influence/leadership items, the people skills items, the problem management/adaptability items, and the social monitoring items. There are some elements in each of these factors that call for being able and willing to aptly interact with other people (e.g., "I get people to listen to me when I know what needs to be done," "I like interacting with different types of people with different backgrounds," "I tend to be seen as a natural leader by others," "I seek opportunities to know more about other people"). There was

significant overlap between the items found in the cultural knowledge factor and the thinking skills factor. Both factors emphasize diversity in knowledge (e.g., "I am aware of the different factors that influence decision making in other cultures," "I approach problems from many angles to find the best solution").

The items within the thinking skills factor were strongly correlated with one another. Their pattern of relationships with items on other factors, however, varied across items. Item 26 (I try to see things from an angle that's slightly different from other people") correlated with relatively few items from other factors indicating that it was tapping a fairly unique aspect of divergent thinking that was not evident in the other factors. Items 17 ("I approach problems from many angles to find the best solution"), on the other hand, appeared to be an aspect of thinking skills that was common to all of the other factors as it was significantly correlated with almost every other item. The strongest correlation outside of the thinking skills factor for item 17 was with item 19 ("I am confident in my ability to solve most problems that come my way"). Item 3 ("I'm the kind of person who manages change well") was also significantly correlated with most other items on the IMPPaCTS scale. The magnitude of most of the correlations was relatively small compared to the correlations within the factor. However, the strongest correlation for item 3 outside of the thinking skills factor was with items on the problem management/adaptability factor, in particular, item 12 ("I can deal effectively with any challenge that I encounter"). In fact, looking at the factor loadings, item 3 loaded almost as strongly on the problem management/adaptability factor as it did on the thinking skills factor. How this item could be revised in the future is examined in Section 4.2.

Within the social monitoring factor, once again, all of the items were strongly correlated with one another. Item 18 ("When a conflict arises, I am confident in my ability to find a compromise that everyone can agree on"), which requires an awareness of the social environment as expected in social monitoring, also correlated with almost every other item in the IMPPaCTS scale. This indicates that the ability to understand the needs of others and to develop a solution that would be suitable to all involved is necessary for all aspects of 3C. Item 30 ("I know how to connect with most people") was also significantly correlated with almost every other IMPPaCTS item. This item also cross-loaded on the people skills factor, and suggestions for clarifying this item are provided in Section 4.2.

In general, the items on the social monitoring factor significantly overlap with the items on the influence/leadership factor (e.g., "I can usually get people to do what I want them to do"), the people skills factor (e.g., "I have strong communication skills"), the problem management/adaptability factor (e.g., "I can deal effectively with any challenge that I encounter"), and the thinking skills factor (e.g., "I approach problems from many angles to find the best solution").

As can be seen from the above discussion and as shown in the previous table, there is significant overlap among the factors that make up the IMPPaCTS scale. Table 48 displays this overlap more clearly.

Table 48. Correlations among IMPPaCTS subscales

	Influence/Leadership	Motivation	People Skills	Problem management/ Adaptability	Cultural Knowledge	Social Monitoring	Thinking Skills
Influence/Leadership							
Motivation	**0.50**						
People Skills	**0.48**	**0.44**					
Problem Management/ Adaptability	**0.52**	**0.58**	**0.56**				
Cultural Knowledge	**0.38**	**0.30**	**0.46**	**0.44**			
Social Monitoring	**0.56**	**0.54**	**0.64**	**0.61**	**0.47**		
Thinking Skills	**0.40**	**0.46**	**0.48**	**0.61**	**0.49**	**0.55**	

Note. Significant correlations are shown in bold ($p < .001$).

As demonstrated in Table 48, all of the subscales were significantly positively correlated with one another. The most significant overlap was between the people skills and social monitoring factors. This is not surprising as one requires the ability to assess the social environment and adapt to the needs of the social environment (social monitoring) in order to deal effectively with people (people skills). However, the size of the correlations across the factors suggests that, although they are all positively related, the subscales are also distinct.

3.3 Describing the IMPPaCTS Scale

The descriptive statistics for the IMPPaCTS items (organized by the draft factor structure found during the exploratory factor analysis) and the reliability of the proposed subscales is included in Table 49. These results reflect the descriptive statistics for the raw data prior to any data clean up conducted before the exploratory factor analysis.

Table 49. Descriptive statistics and reliabilities – IMPPaCTS Scale (Version 2)

Item #	Item Wording	Valid N	Mean	Std. Dev.	Skewness	Kurtosis	Item-Total r	Alpha if deleted
Influence/Leadership (mean inter-item correlation = 0.48; alpha = 0.74)								
32	I can usually get people to do what I want them to do.	170	3.8	0.8	-0.6	0.5	0.49	0.73
33	If I'm in a group of people, I make sure my views are known.	171	3.5	0.9	-0.1	-0.6	0.58	0.61
15	I get people to listen to me when I know what needs to be done.	169	4.0	0.8	-0.6	0.2	0.60	0.59
Influence/Leadership subscale (Index)		**171**	**3.8**	**0.7**	**-0.5**	**0.2**		

Item #	Item Wording	Valid N	Mean	Std. Dev.	Skewness	Kurtosis	Item-Total r	Alpha if deleted
Motivation (mean inter-item correlation = 0.40; alpha = 0.80)								
8	I like to get things done quickly and efficiently.	169	4.3	0.8	-1.4	3.4	0.67	0.73
9	I'm a "get it done" kind of person.	171	4.3	0.8	-0.9	0.6	0.62	0.74
5	I feel more comfortable when I have a clear plan.	168	4.2	0.9	-0.9	0.6	0.32	0.82
10	I'm constantly looking for new things to learn.	171	4.2	0.8	-1.1	2.0	0.56	0.76
19	I am confident in my ability to solve most problems that come my way.	169	4.2	0.7	-1.2	3.3	0.56	0.76
14	It is important for me to establish cooperation and trust when working with others.	170	4.3	0.7	-1.4	3.8	0.58	0.75
Motivation subscale (Index)		**171**	**4.3**	**0.5**	**-1.7**	**6.3**		
People Skills (mean inter-item correlation = 0.32; alpha = 0.70)								
1	I am generally an outgoing person.	171	3.9	1.0	-0.9	0.2	0.50	0.63
6	I like interacting with different types of people from different backgrounds.	171	4.1	0.9	-0.9	0.2	0.44	0.66
31	I have strong communication skills.	170	4.2	0.8	-0.9	0.2	0.57	0.60
2	I tend to get along very well with others.	170	4.3	0.7	-1.0	0.2	0.52	0.63
27	What's right for me is not necessarily right for everyone in the world.	171	4.4	0.8	-1.2	0.2	0.28	0.72
People Skills subscale (Index)		**171**	**4.2**	**0.6**	**-0.9**	**2.2**		
Problem Management/Adaptability (mean inter-item correlation = 0.49; alpha = 0.80)								
4	I keep my emotions in check when tensions are running high.	170	4.0	0.9	-0.8	0.9	0.57	0.75
11	I tend to be seen as a natural leader by others.	171	3.8	0.9	-0.2	-0.8	0.57	0.75
12	I can deal effectively with any challenge that I encounter.	171	4.1	0.7	-0.8	2.1	0.66	0.71
16	I am comfortable managing conflict.	171	4.0	0.8	-0.9	1.0	0.60	0.73
Problem management/Adaptability subscale (Index)		**171**	**4.0**	**0.6**	**-0.8**	**1.5**		

Item #	Item Wording	Valid N	Mean	Std. Dev.	Skewness	Kurtosis	Item-Total r	Alpha if deleted
Cultural Knowledge (mean inter-item correlation = 0.58; alpha = 0.87)								
23	I understand how the economy works in other countries.	170	3.3	1.1	-0.4	-0.7	0.77	0.81
21	I know about the cultural values and religious beliefs of other cultures.	171	3.7	1.0	-0.8	0.1	0.78	0.81
24	I follow international politics.	171	3.6	1.2	-0.5	-0.7	0.60	0.87
20	I am aware of the different factors that influence decision making in other cultures.	171	3.7	0.9	-0.6	-0.2	0.68	0.84
22	I am aware of some of the different social norms of other cultures.	170	4.0	0.8	-0.8	1.0	0.66	0.85
Cultural Knowledge subscale (Index)		**171**	**3.6**	**0.8**	**-0.6**	**0.05**		
Thinking Skills (mean inter-item correlation = 0.48; alpha = 0.73)								
26	I try to see things from an angle that's slightly different from other people.	170	3.9	0.8	-0.7	0.9	0.56	0.63
17	I approach problems from many angles to find the best solution.	170	4.0	0.7	-0.7	1.3	0.61	0.58
3	I'm the kind of person who manages change well.	170	4.0	0.8	-1.0	1.4	0.49	0.71
Thinking subscale (Index)		**171**	**4.0**	**0.6**	**-0.9**	**1.6**		
Social Monitoring (mean inter-item correlation = 0.45; alpha = 0.80)								
25	I try to adapt my approach to the person that I'm working with.	171	4.1	0.7	-1.3	4.4	0.67	0.74
28	I adjust my behaviour to suit the people I am working with.	169	4.0	0.7	-0.6	0.5	0.53	0.78
18	When a conflict arises, I am confident in my ability to find a compromise that everyone can agree on.	171	4.0	0.7	-0.8	1.8	0.64	0.75
30	I know how to connect with most people.	171	4.0	0.7	-0.8	1.5	0.58	0.76
7	I seek opportunities to know more about other people.	168	4.0	0.8	-0.7	0.9	0.51	0.79
Social Monitoring subscale (Index)		**171**	**4.0**	**0.5**	**-0.9**	**2.8**		
IMPPaCTS Total (mean inter-item correlation = 0.34; alpha = 0.93)								
IMPPaCTS Total (Index)		**171**	**4.0**	**0.4**	**-0.9**	**3.4**		
EXCLUDED ITEMS								
13	I have a strong moral compass that governs how I act.	171	4.2	0.7	-0.8	1.1	--	--
29	I'm good at understanding how another person might see the world.	171	3.9	0.7	-0.5	0.5	--	--

As Table 49 demonstrates, the IMPPaCTS scale has good preliminary evidence of internal consistency with the Cronbach's alpha for the subscales ranging from 0.70 to 0.87 and acceptable item-total correlations. In addition, the mean inter-item correlation for each subscale ranged from 0.32 – 0.58. Furthermore, the overall measure demonstrated strong internal consistency with a Cronbach's alpha of 0.93.

3.4 Correlations between IMPPaCTS Items and Subscales and Theoretically Related Scales

The next set of analyses explored the relationship between each of the IMPPaCTS scale items and the theoretically related scales. The full correlation table (available in Annex G) showing all relationships is quite large. Thus, to facilitate reader understanding of the critical patterns, we explored the correlations among each item and its relationship to the top10 theoretically related scales. Constraining the number of theoretically related scales involved will hopefully help to highlight the most critical relationships.

3.4.1 Influence/Leadership

Results for the IMPPaCTS item related to getting people to do what one wants are shown in Table 50.

Table 50. Top 10 correlations between "I can usually get people to do what I want them to do" and the theoretically related scales

Theoretically Related Scale	*r*	*p*
Social Initiative (MPQ subscale)	0.47	< .001
Influence and Persuasion	0.47	< .001
Extraversion (Big Five subscale)	0.42	< .001
Self-Efficacy	0.40	< .001
Emotional Stability (ESC subscale)	0.38	< .001
Negotiating with Others	0.34	< .001
Cognitive Flexibility Inventory: Control	0.33	< .001
Emotional Stability (MPQ subscale)	0.33	< .001
Conceptual Knowledge of Culture	0.32	< .001
Resilience	0.30	< .001

As seen in Table 50, this item was particularly strongly correlated with the social initiative subscale of the MPQ (e.g., "I see myself as someone who is often the driving force behind things") and the Influence and Persuasion scale ("I get what I ask for when dealing with people outside of my organization"). Both scales speak to taking action. Furthermore, the extraversion subscale of the Big Five was also strongly correlated with this item (e.g., "I see myself as someone who has an assertive personality") as was the Self-Efficacy scale (e.g., "If someone opposes me, I can find the means and ways to get what I want").

These correlations strengthen the argument for the inclusion of this item on a subscale measuring Influence/Leadership as it appears to tap an individual's ability to sway outcomes.

The next IMPPaCTS item addressed the skill of making one's views known when in a group, as shown in Table 51.

Table 51. Top 10 correlations between "If I'm in a group of people, I make sure my views are known" and the theoretically related scales

Theoretically Related Scale	*r*	*p*
Evaluating Beliefs and Assumptions (Self-Leadership subscale)	0.33	< .001
Extraversion (Big Five subscale)	0.32	< .001
Influence and Persuasion	0.30	< .001
Self-Efficacy	0.29	< .001
Social Initiative (MPQ subscale)	0.29	< .001
Conceptual Knowledge of Culture	0.25	< .001
Negotiating with Others	0.25	.001
Emotional Stability (ESC subscale)	0.23	.002
Openmindedness (MPQ subscale)	0.21	.005
Relationship Building	0.20	.011

This pattern of results shows a lower magnitude correlations than for most of the other IMPPaCTS items. This IMPPaCTS item was most closely related to the evaluating beliefs and assumptions subscale of the self-leadership measure, containing items such as "I openly articulate and evaluate my own assumptions when I have a disagreement with someone else" and "I think about and evaluate the beliefs and assumptions I hold." As with the previous IMPPaCTS item, this item was also associated with the extraversion subscale of the Big Five scale, with influence and persuasion skills, perceived self-efficacy and social initiative. In fact, there were seven overlapping related scales among the strongest relationships in these two items.

This argues not only for the idea that this item measures an individual's ability to sway outcomes, but also suggests that these two items likely tap the same underlying construct.

The next IMPPaCTS item was related to getting people to listen when one has a clear sense of what is necessary, as shown in Table 52.

Table 52. Top 10 correlations between "I get people to listen to me when I know what needs to be done" and the theoretically related scales

Theoretically Related Scale	*r*	*p*
Social Initiative (MPQ subscale)	0.53	< .001
Self-Efficacy	0.47	< .001
Influence and Persuasion	0.47	< .001
Emotional Stability (ESC subscale)	0.40	< .001
Resilience	0.39	< .001
Control (Cognitive Flexibility subscale)	0.37	< .001
Emotional Stability (MPQ subscale)	0.36	< .001
Extraversion (Big Five subscale)	0.35	< .001
Self-Observation (Self-Leadership subscale)	0.34	< .001
Conscientiousness (ESC subscale)	0.33	< .001

This item showed the strongest relationship with the social initiative subscale of the MPQ, containing items like "I see myself as someone who takes the lead" and "I see myself as someone who is often the

driving force behind things." This item was significantly correlated with the influence and persuasion scale as well as the self-efficacy scale.

Overall, then, these items seem to speak to initiative in social environments, the extraversion necessary to drive one's own agenda and the confidence or perceived self-efficacy to do so. These items seem to all capture the skill of being able to influence or lead others when working in cross-cultural environments.

3.4.2 Motivation

The next IMPPaCTS item addressed the desire to get things done quickly and efficiently. The top 10 strongest relationships between this item and the theoretically related measures are displayed in Table 53.

Table 53. Top 10 correlations between "I like to get things done quickly and efficiently" and the theoretically related scales

Theoretically Related Scale	*r*	*p*
Conscientiousness (ESC subscale)	0.44	< .001
Self-Efficacy	0.35	< .001
Self-Observation (Self-Leadership subscale)	0.33	< .001
Conscientiousness (Big Five subscale)	0.32	< .001
Emotional Stability (ESC subscale)	0.31	< .001
Global Transformational Leadership	0.31	< .001
Resilience	0.30	< .001
Control (Cognitive Flexibility subscale)	0.27	< .001
Influence and Persuasion	0.24	.002
Evaluating Beliefs and Assumptions (Self-Leadership subscale)	0.23	.002

This item correlated most strongly with the conscientiousness subscale of the DeWit and Buick (2010) scale containing items such as "I see myself as someone who completes assigned tasks efficiently," as well as significantly with the Big Five conscientiousness subscale. It was also significantly correlated with self-efficacy and with the self-observation subscale (e.g., "I keep track of my progress on projects I am working on"). As a whole, then, this item seemed to tap the ability and motivation to move forward with agency while attending to one's progress.

The next item assessed the initiative of an individual as a "get it done" type of person, as shown in Table 54.

Table 54. Top 10 correlations between "I'm a 'get it done' kind of person" and the theoretically related scales

Theoretically Related Scale	*r*	*p*
Conscientiousness (ESC subscale)	0.47	< .001
Conscientiousness (Big Five subscale)	0.45	< .001
Self-Efficacy	0.41	< .001
Emotional Stability (ESC subscale)	0.37	< .001
Resilience	0.36	< .001
Social Initiative (MPQ subscale)	0.35	< .001
Self-Observation (Self-Leadership subscale)	0.34	< .001
Control (Cognitive Flexibility subscale)	0.31	< .001
Global Transformational Leadership	0.27	< .001
Influence and Persuasion	0.26	< .001
Relationship Building	0.26	< .001

As with the previous item, this item was also most strongly correlated with conscientiousness as measured by the ESC scale (e.g., "I see myself as someone who perseveres until goals are successfully reached") and by the Big Five scale (e.g., "Makes plans and follows through with them"). It was also strongly correlated with measures of self-efficacy (e.g., "It is easy for me to stick to my aims and accomplish my goals"), resilience (e.g., "I believe I can achieve my goals, even if there are obstacles"), and social initiative (e.g., "I see myself as someone who takes initiative"). This item appears to tap one's initiative to work toward an end goal.

The next item related to the comfort associated with having a clear plan, as shown in Table 55.

Table 55. Top 10 correlations between "I feel more comfortable when I have a clear plan" and the theoretically related scales

Theoretically Related Scale	*r*	*p*
Tolerance for Uncertainty	-0.43	< .001
Flexibility (MPQ subscale)	-0.31	< .001
Self-Monitoring	-0.19	.013
Self-Observation (Self-Leadership subscale)	0.19	.011
Extraversion (Big Five subscale)	-0.17	.027
Emotional Stability (MPQ subscale)	-0.17	.031
Conscientiousness (Big Five subscale)	0.13	.102
Agreeableness (Big Five subscale)	-0.12	.118
Alternatives (Cognitive Flexibility subscale)	0.10	.205
Evaluating Beliefs and Assumptions (Self-Leadership subscale)	0.09	.244

As might be expected, the desire to have a clear plan was strongly correlated with low tolerance for uncertainty, with the scale containing items such as "I like to have a plan for everything and a place for everything." The need for a clear plan was also negatively correlated with the flexibility subscale of the MPQ (e.g., "I see myself as someone who wants to know exactly what will happen" and "I see myself as someone who works according to plan"). This suggests that the IMPPaCTS item captures the low flexibility and high need for certainty often associated with needing a coherent plan to feel comfortable.

The fact that this item is only significantly correlated with two theoretically related scales suggests that it relates to only two specific aspects of 3C (rather than the full spectrum), but does so distinctively.

The next IMPPaCTS item addressed another aspect of cross-cultural competence, specifically the desire to constantly learn new things. Table 56 examines the correlations of this item with the theoretically related scales to which it was most strongly related.

Table 56. Top 10 correlations between "I'm constantly looking for new things to learn" and the theoretically related scales

Theoretically Related Scale	*r*	*p*
Openmindedness (MPQ subscale)	0.48	< .001
Self-Efficacy	0.38	< .001
Conceptual Knowledge of Culture	0.35	< .001
Cultural Empathy (MPQ subscale)	0.34	< .001
Social Initiative (MPQ subscale)	0.34	< .001
Flexibility (MPQ subscale)	0.30	< .001
Self-Observation (Self-Leadership subscale)	0.29	< .001
Evaluating Beliefs and Assumptions (Self-Leadership subscale)	0.28	< .001
Alternatives (Cognitive Flexibility subscale)	0.28	< .001
Conscientiousness (ESC subscale)	0.27	< .001

This IMPPaCTS item was most strongly correlated with the openmindedness subscale of the MPQ (e.g., "I see myself as someone who is curious," "I see myself as someone who is open to new ideas"), and the self-efficacy scale (e.g., "When I am confronted with a problem, I can usually find several solutions"). This suggests that desire to learn is associated with openness and a belief in one's own abilities.

The meaning of the significant correlation of this item with the conceptual knowledge of culture scale is less obvious, but may represent the fact that people who are highly motivated to learn may also be more interested in learning about people of other cultures. This speculation seems supported by the strong relationship of this IMPPaCTS item with the cultural empathy subscale of the MPQ, as well as the significant relationship with social initiative.

The next IMPPaCTS item addressed one's confidence in solving problems, as shown in Table 57.

Table 57. Top 10 correlations between "I am confident in my ability to solve most problems that come my way" and the theoretically related scales

Theoretically Related Scale	*r*	*p*
Emotional Stability (ESC subscale)	0.61	< .001
Resilience	0.55	< .001
Self-Efficacy	0.54	< .001
Control (Cognitive Flexibility subscale)	0.43	< .001
Conscientiousness (ESC subscale)	0.42	< .001
Global Transformational Leadership	0.41	< .001
Social Initiative (MPQ subscale)	0.40	< .001
Influence and Persuasion	0.39	< .001
Emotional Stability (MPQ subscale)	0.39	< .001
Alternatives (Cognitive Flexibility subscale)	0.37	< .001

This item showed strong and significant relationships with a number of theoretically related scales. The strongest relationship was with a measure of emotional stability containing items such as "I see myself as someone who completes assigned tasks efficiently" and "I see myself as someone who perseveres until goals are reached," and a resilience scale (e.g., "I am able to adapt when changes come my way"). This item is also strongly related to a well-established measure of self-efficacy (e.g., "I can solve most problems if I invest the necessary effort"). Overall, then, this item seems to capture perceived self-efficacy in relation to resolving challenges. However, its relationships with other theoretically related scales also seem to suggest that it also captures elements of cognitive flexibility (e.g., "I am capable of overcoming the difficulties in life that I face" and "I can often think of more than one way to resolve a difficult situation that I'm involved with") and social initiative.

The inclusion of this item into the category of motivation rather than into the problem management/adaptability factor might be counterintuitive given that the item contains explicit reference to addressing problems. Our perspective is that this item seems to have captured participants' self-efficacy and confidence more than being specifically related to problem management/adaptability. This confidence provides the motivation necessary to keep moving forward. However, this issue will need to be further addressed in future research.

The next item addressed the importance of building trust and cooperation when working collaboratively, as shown in Table 58.

Table 58. Top 10 correlations between "It is important for me to establish cooperation and trust when working with others" and the theoretically related scales

Theoretically Related Scale	*r*	*p*
Social Initiative (MPQ subscale)	0.43	< .001
Influence and Persuasion	0.40	< .001
Self-Efficacy	0.39	< .001
Cultural Empathy (MPQ subscale)	0.38	< .001
Resilience	0.37	< .001
Control (Cognitive Flexibility subscale)	0.37	< .001
Global Transformational Leadership	0.36	< .001
Emotional Stability (ESC subscale)	0.36	< .001
Conscientiousness (ESC subscale)	0.34	< .001
Alternatives (Cognitive Flexibility subscale)	0.34	< .001

This item was most strongly correlated with the social initiative subscale of the MPQ ("…easily approaches other people") and with the influence and persuasion scale (e.g., "I get along well with people from outside of my organization"). As might be expected, this item was also significantly correlated with self-efficacy and cultural empathy.

3.4.3 People Skills

The next IMPPaCTS item was designed in recognition of the fact that culturally competent people are often argued to be more outgoing (e.g., Carver & Connor-Smith, 2010). The relationship between this item and the 10 most strongly correlated theoretically related scales is shown in Table 59.

Table 59. Top 10 correlations between "I am generally an outgoing person" and the theoretically related scales

Theoretically Related Scale	*r*	*p*
Extraversion (Big Five subscale)	0.65	< .001
Social Initiative (MPQ subscale)	0.59	< .001
Influence and Persuasion	0.40	< .001
Flexibility (MPQ subscale)	0.37	< .001
Self-Efficacy	0.33	< .001
Emotional Stability (MPQ subscale)	0.33	< .001
Conceptual Knowledge of Culture	0.32	< .001
Communication Skills	0.31	< .001
Control (Cognitive Flexibility subscale)	0.30	< .001
Openmindedness (MPQ subscale)	0.28	< .001

As expected, this IMPPaCTS item was most strongly correlated with the extraversion subscale of the Big Five measure. It was also well correlated with social initiative (e.g., "I see myself as someone who makes contacts easily," and "I see myself as someone who easily approaches other people"), and strong influence and persuasion skills.

The next IMPPaCTS item spoke to having positive feelings about interacting with a range of diverse people, as shown in Table 60.

Table 60. Top 10 correlations between "I like interacting with different types of people from different backgrounds" and the theoretically related scales

Theoretically Related Scale	*r*	*p*
Openmindedness (MPQ subscale)	0.57	< .001
Conceptual Knowledge of Culture	0.43	< .001
Flexibility (MPQ subscale)	0.39	< .001
Social Initiative (MPQ subscale)	0.38	< .001
Cultural Empathy (MPQ subscale)	0.36	< .001
Negotiating with Others	0.30	< .001
Extraversion (Big Five subscale)	0.29	< .001
Evaluating Beliefs and Assumptions (Self-Leadership subscale)	0.27	< .001
Influence and Persuasion	0.21	.005
Alternatives (Cognitive Flexibility subscale)	0.21	.005

Responses to this IMPPaCTS item were most strongly related to the openmindedness subscale of the MPQ. This seems logical, given that the MPQ openmindedness subscale contains items like "I see myself as someone who is interested in other cultures" and "I see myself as someone who is fascinated by other people's opinions." The next strongest relationship was with the conceptual knowledge of culture scale, suggesting that people who like interacting with people from different backgrounds may also be likely to have more knowledge about them. This IMPPaCTS item was also significantly correlated with social initiative and cultural empathy.

The next IMPPaCTS item addressed the perceived strength of one's communication skills, as shown in Table 61.

Table 61. Top 10 correlations between "I have strong communication skills" and the theoretically related scales

Theoretically Related Scale	*r*	*p*
Social Initiative (MPQ subscale)	0.57	< .001
Extraversion (Big Five subscale)	0.50	< .001
Influence and Persuasion	0.46	< .001
Communication Skills	0.44	< .001
Control (Cognitive Flexibility subscale)	0.44	< .001
Emotional Stability (MPQ subscale)	0.38	< .001
Self-Efficacy	0.37	< .001
Emotional Stability (ESC subscale)	0.35	< .001
Conceptual Knowledge of Culture	0.35	< .001
Self-Monitoring	0.34	< .001

Looking at Table 63, the strongest relationship of this item was with the social initiative subscale on the MPQ, which contains items such as "I see myself as someone who is inclined to speak out" and "I see myself as someone who likes to speak in public." The next strongest correlation was with the extraversion subscale of the MPQ, followed by the influence and persuasion scale ("My word carries weight with people outside of my organization"). This suggests that this item might have tapped the willingness to express one's ideas in a public forum, as well as the ability to persuade people through one's communications.

It may be initially surprising and counterintuitive that the relationship of this item with the communication skills scale is not the strongest. This may be because the communication skill scale items relate specifically to adjusting one's communication to the needs of one's partner rather than more generic communication skills (e.g., "I change my verbal behaviour [e.g., accent, tone] when an interaction requires it") and "I vary the rate of my speaking when a situation requires it."

The next IMPPaCTS item addressed one's ability to get along with others, a critical aspect of social competence. Correlational results for this item are shown in Table 62.

Table 62. Top 10 correlations between "I tend to get along very well with others" and the theoretically related scales

Theoretically Related Scale	*r*	*p*
Agreeableness (Big Five subscale)	0.47	< .001
Influence and Persuasion	0.40	< .001
Emotional Stability (MPQ subscale)	0.34	< .001
Social Initiative (MPQ subscale)	0.32	< .001
Self-Efficacy	0.31	< .001
Emotional Stability (ESC subscale)	0.31	< .001
Cultural Empathy (MPQ subscale)	0.30	< .001
Control (Cognitive Flexibility subscale)	0.28	< .001
Adjusting Emotions	0.27	< .001
Conscientiousness (ESC subscale)	0.26	< .001

As expected, this item correlated most strongly with the agreeableness subscale of the Big Five measure. It was also significantly correlated with the influence and persuasion scale (e.g., "I get along well with people from outside of my organization"). This item also correlated significantly with the emotional stability and social initiative subscales of the MPQ, suggesting that an important part of interacting competently is staying calm when under pressure, and being willing to take initiative.

The next IMPPaCTS item was designed to tap into a sense of relativism, and that one's own beliefs are not necessarily right for other people, as shown in Table 63.

Table 63. Top 10 correlations between "What's right for me is not necessarily right for everyone in the world" and the theoretically related scales

Theoretically Related Scale	*r*	*p*
Influence and Persuasion	0.20	.010
Global Transformational Leadership	0.19	.013
Control (Cognitive Flexibility subscale)	0.19	.014
Relationship Building	0.18	.016
Negotiating with Others	0.18	.018
Cultural Empathy (MPQ subscale)	0.18	.020
Openmindedness (MPQ subscale)	0.17	.025
Emotional Stability (ESC subscale)	0.17	.027
Agreeableness (Big Five subscale)	0.15	.053
Resilience	0.14	.068

Results for this item showed no significant relationships with any of the theoretically related scales. In retrospect, the relativism construct may not have been well captured in any of the theoretically related scales. This will need to be addressed in future research.

3.4.4 Problem Management/Adaptability

The next 4 items tapped participants' ability to deal effectively with challenging problems and to adapt as necessary.

The first item in this section assessed emotional stability in stressful situations, as shown in Table 64.

Table 64. Top 10 correlations between "I keep my emotions in check when tensions are running high" and the theoretically related scales

Theoretically Related Scale	*r*	*p*
Emotional Stability (MPQ subscale)	0.51	< .001
Resilience	0.45	< .001
Self-Efficacy	0.41	< .001
Emotional Stability (ESC subscale)	0.41	< .001
Adjusting Emotions	0.40	< .001
Control (Cognitive Flexibility subscale)	0.40	< .001
Alternatives (Cognitive Flexibility subscale)	0.37	< .001
Self-Monitoring	0.35	< .001
Flexibility (MPQ subscale)	0.31	< .001
Global Transformational Leadership	0.30	< .001

Not surprisingly, this item was most strongly correlated with measures of emotional stability within both the MPQ scale (e.g., "I see myself as someone who keeps calm when difficulties arise") and the ESC scale (e.g., "I see myself as someone who remains controlled in tense situations") as well as the Adjusting emotions scale (e.g., "I can avoid getting upset by taking a different perspective on things"). It was also strongly correlated with the Resilience scale (which contained items such as "Under pressure, I stay focused and think clearly) and the Self-Efficacy scale (containing items such as "I can remain calm when facing difficulties because I can rely on my coping abilities"). This item also correlated significantly with two dimensions of cognitive flexibility, including both maintaining control (e.g., "When encountering difficult situations, I become so stressed that I cannot think of a way to resolve the situation" – reverse scored) and seeking alternatives (e.g., "When I encounter difficult situations, I stop and try to think of several ways to resolve it").

These relationships indicate that this item is related to the ability to think clearly in difficult situations by controlling emotions.

The next item assessed participants' perceptions of how they were viewed by others, as seen in Table 65.

Table 65. Top 10 correlations between "I tend to be seen as a natural leader by others" and the theoretically related scales

Theoretically Related Scale	*r*	*p*
Social Initiative (MPQ subscale)	0.60	< .001
Emotional Stability (MPQ subscale)	0.51	< .001
Self-Efficacy	0.51	< .001
Influence and Persuasion	0.50	< .001
Emotional Stability (ESC subscale)	0.49	< .001
Control (Cognitive Flexibility subscale)	0.44	< .001
Resilience	0.44	< .001
Extraversion (Big Five subscale)	0.43	< .001
Global Transformational Leadership	0.39	< .001
Conceptual Knowledge of Culture	0.39	< .001

This item related most strongly with the social initiative subscale of the MPQ (e.g., "Takes the lead," "Is often the driving force behind things"). As with the previous item, emotional stability both as measured by the MPQ (e.g., "I see myself as someone who radiates calm," "I see myself as someone who considers problems solvable") and the ESC (e.g., "I have the emotional stability needed to be successful in my work") were among the most strongly associated theoretically related scales. The Self-Efficacy scale (containing items such as "I can solve most problems if I invest the necessary effort"), the Resilience scale (e.g., "I am not easily discouraged by failure"), and the maintaining control subscale of the Cognitive Flexibility scale (e.g., "I have a hard time making decisions when faced with difficult situations" – reverse scored) were all significantly related to this IMPPaCTS item.

These relationships seem to indicate that a significant aspect of being seen as a leader is also maintaining composure in stressful situations and being able to deal with and initiate solutions to problems.

However, it is important to acknowledge that the conceptual content of this item still seems to pull toward the influence/leadership subscale rather than where it landed during the exploratory factor analysis. This issue is addressed in more detail in the recommendations section of this report.

The following item assessed participants' perceptions of their ability to handle themselves in difficult situations, as seen in Table 66.

Table 66. Top 10 correlations between "I can deal effectively with any challenge that I encounter" and the theoretically related scales

Theoretically Related Scale	*r*	*p*
Resilience	0.54	< .001
Self-Efficacy	0.54	< .001
Emotional Stability (ESC subscale)	0.54	< .001
Emotional Stability (MPQ subscale)	0.45	< .001
Social Initiative (MPQ subscale)	0.43	< .001
Control (Cognitive Flexibility subscale)	0.41	< .001
Conceptual Knowledge of Culture	0.40	< .001
Openmindedness (MPQ subscale)	0.40	< .001
Conscientiousness (ESC subscale)	0.40	< .001
Evaluating Beliefs and Assumptions (Self-Leadership subscale)	0.40	< .001

Resilience (e.g., "I can deal with whatever comes my way"), self-efficacy (e.g., "I can always manage to solve difficult problems if I try hard enough"), emotional stability as measured by the ESC (e.g., "I see myself as someone who handles stress well") and the MPQ (e.g., ""I see myself as someone who has a solution for every problem"), social initiative, as measured by the MPQ (e.g., ""I see myself as someone who knows how to act in social settings"), and maintaining control, as measured by the Cognitive Flexibility scale (e.g., "When I encounter difficult situations, I just don't know what to do" – reverse scored) were among the scales most strongly related to this item.

These relationships indicate that this IMPPaCTS item might tap into the need to remain calm in order to deal effectively with challenges.

An important aspect of managing problems is the ability to resolve disagreements. Correlational results for the IMPPaCTS item tapping this ability are shown in Table 67.

Table 67. Top 10 correlations between "I am comfortable managing conflict" and the theoretically related scales

Theoretically Related Scale	*r*	*p*
Self-Efficacy	0.45	< .001
Social Initiative (MPQ subscale)	0.44	< .001
Emotional Stability (ESC subscale)	0.43	< .001
Resilience	0.40	< .001
Emotional Stability (MPQ subscale)	0.37	< .001
Conceptual Knowledge of Culture	0.37	< .001
Control (Cognitive Flexibility subscale)	0.36	< .001
Extraversion (Big Five subscale)	0.34	< .001
Self-Monitoring	0.33	< .001
Openmindedness (MPQ subscale)	0.32	< .001

As with the previous items, the scales most strongly related to this item were the self-efficacy scale (e.g., "I am confident that I could deal effectively with unexpected events"), the social initiative subscale of the MPQ (e.g., ""I see myself as someone who easily approaches other people"), the emotional stability subscales of the ESC scale (e.g., "I see myself as someone who remains controlled in tense situations") and the MPQ (e.g., ""I see myself as someone who suffers from conflicts with others" – reverse scored), the resilience scale (e.g., "I think of myself as a strong person when dealing with life's challenges and difficulties"), and the maintaining control subscale of the cognitive flexibility scale (e.g., "I find it troublesome that there are so many different ways to deal with difficult situations" – reverse scored).

This item appears to be tapping participants' abilities to effectively deal with problems/conflicts through working collaboratively with others.

3.4.5 Cultural Knowledge

The next 5 items tapped specific elements of cultural knowledge.

The first IMPPaCTS item related to cultural knowledge addressed understanding of economics in other countries, as shown in Table 68.

Table 68. Top 10 correlations between "I understand how the economy works in other countries" and the theoretically related scales

Theoretically Related Scale	*r*	*p*
Conceptual Knowledge of Culture	0.78	< .001
Social Initiative (MPQ subscale)	0.42	< .001
Openmindedness (MPQ subscale)	0.37	< .001
Negotiating with Others	0.37	< .001
Self-Efficacy	0.32	< .001
Evaluating Beliefs and Assumptions (Self-Leadership subscale)	0.31	< .001
Influence and Persuasion	0.30	< .001
Global Transformational Leadership	0.29	< .001
Resilience	0.28	< .001
Emotional Stability (MPQ subscale)	0.27	< .001

As might be expected, this item was most strongly correlated with the scale intended to tap conceptual knowledge of culture (containing items such as "I know about the economic systems in other countries").

This item was also significantly correlated with the social initiative subscale of the MPQ (e.g., "Takes the lead" "Makes contacts easily), as well as with the openmindedness subscale (e.g., "I see myself as someone who gets involved in other countries").

The next IMPPaCTS item related to knowledge about cultural values and religious beliefs of other cultures, as shown in Table 69.

Table 69. Top 10 correlations between "I know about the cultural values and religious beliefs of other cultures" and the theoretically related scales

Theoretically Related Scale	*r*	*p*
Conceptual Knowledge of Culture	0.77	< .001
Openmindedness (MPQ subscale)	0.53	< .001
Social Initiative (MPQ subscale)	0.42	< .001
Negotiating with Others	0.35	< .001
Flexibility (MPQ subscale)	0.35	< .001
Self-Efficacy	0.33	< .001
Emotional Stability (MPQ subscale)	0.30	< .001
Evaluating Beliefs and Assumptions (Self-Leadership subscale)	0.29	< .001
Alternatives (Cognitive Flexibility subscale)	0.28	< .001
Communication Skills	0.28	< .001

As expected, this item was most strongly correlated with the scale intended to tap conceptual knowledge of culture (containing items such as "I have knowledge of different religions [other than my own]). As was the case for the previous IMPPaCTS item, this item also correlated strongly with openmindedness and social initiative.

The next IMPPaCTS item related to knowledge about international politics, as shown in Table 70.

Table 70. Top 10 correlations between "I follow international politics" and the theoretically related scales

Theoretically Related Scale	*r*	*p*
Conceptual Knowledge of Culture	0.65	< .001
Openmindedness (MPQ subscale)	0.37	< .001
Social Initiative (MPQ subscale)	0.29	< .001
Flexibility (MPQ subscale)	0.25	< .001
Evaluating Beliefs and Assumptions (Self-Leadership subscale)	0.25	.001
Emotional Stability (MPQ subscale)	0.19	.013
Negotiating with Others	0.19	.013
Resilience	0.18	.020
Adjusting Emotions	0.17	.030
Influence and Persuasion	0.17	.031

This item was most strongly correlated with the scale intended to tap conceptual knowledge of culture (containing items such as "I have knowledge of different political systems that exist outside of Canada"). As was the case for the other IMPPaCTS items related to cultural knowledge, this item also correlated strongly with openmindedness and social initiative.

The next IMPPaCTS item related to knowledge about the factors that influence decision-making in other cultures, as shown in Table 71.

Table 71. Top 10 correlations between "I am aware of the different factors that influence decision making in other cultures" and the theoretically related scales

Theoretically Related Scale	*r*	*p*
Conceptual Knowledge of Culture	0.64	< .001
Openmindedness (MPQ subscale)	0.38	< .001
Social Initiative (MPQ subscale)	0.36	< .001
Negotiating with Others	0.34	< .001
Relationship Building	0.24	p = .002
Flexibility (MPQ subscale)	0.23	p = .002
Self-Efficacy	0.20	p = .007
Communication Skills	0.20	p = .009
Evaluating Beliefs and Assumptions (Self-Leadership subscale)	0.18	p = .018
Extraversion (Big Five subscale)	0.18	p = .021

As might be expected, this item was most strongly correlated with the scale intended to tap conceptual knowledge of culture (containing items such as "Individuals from other cultures may make decisions in a different way than I do"). As was the case for the other IMPPaCTS items related to cultural knowledge, this item also correlated strongly with openmindedness and social initiative.

The next IMPPaCTS item related to knowledge about social norms in other cultures, as shown in Table 72.

Table 72. Top 10 correlations between "I am aware of some of the different social norms of other cultures." and the theoretically related scales

Theoretically Related Scale	*r*	*p*
Conceptual Knowledge of Culture	0.61	< .001
Openmindedness (MPQ subscale)	0.48	< .001
Social Initiative (MPQ subscale)	0.39	< .001
Negotiating with Others	0.33	< .001
Flexibility (MPQ subscale)	0.33	< .001
Evaluating Beliefs and Assumptions (Self-Leadership subscale)	0.30	< .001
Self-Efficacy	0.30	< .001
Communication Skills	0.30	< .001
Global Transformational Leadership	0.29	< .001
Influence and Persuasion	0.29	< .001

As expected, this item was most strongly correlated with the scale intended to tap conceptual knowledge of culture (containing items such as "I am aware of some of the ways nonverbal behaviours differ between cultures"). As was the case for the other IMPPaCTS items related to cultural knowledge, this item also correlated strongly with openmindedness and social initiative.

3.4.6 Thinking Skills

The next 3 IMPPaCTS items explored elements of thinking that might be associated with cross-cultural competence.

The first item addressed seeing things from a different angle, as shown in Table 73.

Table 73. Top 10 correlations between "I try to see things from an angle that's slightly different from other people" and the theoretically related scales

Theoretically Related Scale	*r*	*p*
Openmindedness (MPQ subscale)	0.34	< .001
Alternatives (Cognitive Flexibility subscale)	0.31	< .001
Flexibility (MPQ subscale)	0.28	< .001
Conceptual Knowledge of Culture	0.27	< .001
Resilience	0.26	< .001
Self-Efficacy	0.25	< .001
Tolerance for Uncertainty	0.24	.001
Evaluating Beliefs and Assumptions (Self-Leadership subscale)	0.24	.001
Emotional Stability (ESC subscale)	0.24	.002
Communication Skills	0.23	.002

Not surprisingly, this item showed the strongest correlation with the openmindedness subscale of the MPQ (containing items such as "Is open to new ideas"), the flexibility subscale of the MPQ (e.g., "I see myself as someone who seeks challenges;" "I see myself as someone who enjoys unfamiliar experiences") and the alternatives subscale of the Cognitive Flexibility Scale (e.g., "I often look at a situation from different viewpoints"). This pattern of results seems conceptually consistent with the ability to see the world in a slightly different way.

The next IMPPaCTS item tapped the inclination to see problems from multiple perspectives, as shown in Table 74.

Table 74. Top 10 correlations between "I approach problems from many angles to find the best solution" and the theoretically related scales

Theoretically Related Scale	*r*	*p*
Alternatives (Cognitive Flexibility subscale)	0.53	< .001
Self-Efficacy	0.45	< .001
Resilience	0.43	< .001
Influence and Persuasion	0.42	< .001
Openmindedness (MPQ subscale)	0.41	< .001
Evaluating Beliefs and Assumptions (Self-Leadership subscale)	0.39	< .001
Conceptual Knowledge of Culture	0.38	< .001
Emotional Stability (ESC subscale)	0.36	< .001
Social Initiative (MPQ subscale)	0.34	< .001
Adjusting Emotions	0.33	< .001

This item was most strongly correlated with the alternatives subscale of the Cognitive Flexibility scale (containing items such as "It is important to look at difficult situations from many different angles") and with a scale measuring self-efficacy (e.g., "When I am confronted with a problem, I can usually find several solutions"). This item was also significantly correlated with the resilience scale (e.g., I can deal with whatever comes my way"), and with the MPQ subscale measuring openmindedness (e.g., "I see myself as someone who tries out various approaches"). The relatively strong correlation with the influence and persuasion scale (e.g., "I get along well with people from outside my organization") may suggest that this item relates to agility in interpersonal situations as well as to mental agility in general.

The next item explored the skill of managing change, as shown in Table 75.

Table 75. Top 10 correlations between "I'm the kind of person who manages change well" and the theoretically related scales

Theoretically Related Scale	*r*	*p*
Emotional Stability (MPQ subscale)	0.47	< .001
Self-Efficacy	0.44	< .001
Emotional Stability (ESC subscale)	0.44	< .001
Adjusting Emotions	0.43	< .001
Resilience	0.40	< .001
Openmindedness (MPQ subscale)	0.39	< .001
Social Initiative (MPQ subscale)	0.39	< .001
Flexibility (MPQ subscale)	0.37	< .001
Influence and Persuasion	0.36	< .001
Alternatives (Cognitive Flexibility subscale)	0.31	< .001

The pattern of correlations suggests that this item seems to most directly capture emotional stability as measured by the MPQ and the DeWit and Buick (2010) subscales. This seems logical, as these subscales contain items such as "I see myself as someone who considers problems solvable" and "I see myself as someone who remains controlled in tense situations." Not surprising as well is the strong relationship of this item to the self-efficacy scale used in this study (e.g., "I can usually handle whatever comes my way") and to the resilience scale (e.g., "I can deal with whatever comes my way"). This item is also significantly correlated with a scale tapping the ability to adjust one's emotions as necessary (e.g., "I can get into a better mood quite easily"), suggesting that emotional adaptability may be an important part of managing change in diverse environments.

However, it should be noted that this item does not seem to fully fit with the other items within this category, which both seem to address aspects of divergent thinking. This issue is discussed in more detail in the recommendations section of this report.

3.4.7 Social Monitoring

The next set of 5 items seemed to capture elements of social monitoring.

Results for the IMPPaCTS item "I try to adapt my approach to the person that I'm working with" are shown in Table 76.

Table 76. Top 10 correlations between "I try to adapt my approach to the person that I'm working with" and the theoretically related scales

Theoretically Related Scale	*r*	*p*
Cultural Empathy (MPQ subscale)	0.48	< .001
Openmindedness (MPQ subscale)	0.43	< .001
Negotiating with Others	0.39	< .001
Alternatives (Cognitive Flexibility subscale)	0.39	< .001
Influence and Persuasion	0.38	< .001
Self-Monitoring	0.36	< .001
Control (Cognitive Flexibility subscale)	0.33	< .001
Self-Efficacy	0.33	< .001
Global Transformational Leadership	0.29	< .001
Communication Skills	0.28	< .001

This IMPPaCTS item showed strong relationships with the cultural empathy subscale of the MPQ (containing items such as "I see myself as someone who pays attention to the emotions of others"), openmindedness subscale of the MPQ (containing items such as "I see myself as someone who has a feeling for what is appropriate in a specific culture"), negotiation with others (containing items such as "I would use different tactics when negotiating with people from different backgrounds") and the ability to construe multiple alternatives as measured with the Cognitive Flexibility Scale (containing items such as "I try to think about things from another person's point of view"). This item was also well correlated with a self-monitoring scale containing items such as "In social situations, I have the ability to alter my behaviour if I feel that something else is called for." As a whole, these correlations seem to suggest that this item taps both understanding of and openness to the needs of others that can only be achieved through monitoring of the social situation.

The next IMPPaCTS item addressed the need to adjust one's behaviour when working collaboratively. Correlations for this item are shown in Table 77.

Table 77. Top 10 correlations between "I adjust my behaviour to suit the people I am working with" and the theoretically related scales

Theoretically Related Scale	*r*	*p*
Influence and Persuasion	0.36	< .001
Control (Cognitive Flexibility subscale)	0.36	< .001
Self-Monitoring	0.34	< .001
Extraversion (Big Five subscale)	0.31	< .001
Negotiating with Others	0.30	< .001
Self-Efficacy	0.26	< .001
Social Initiative (MPQ subscale)	0.25	< .001
Conceptual Knowledge of Culture	0.25	< .001
Communication Skills	0.23	.002
Openmindedness (MPQ subscale)	0.23	.002

The pattern of correlations showed this item as most strongly correlated with the influence and persuasion scale (containing items such as "I get what I ask for when dealing with people outside of my organization"), the control aspect of the Cognitive Flexibility Scale (containing items such as "I feel like

I have no power to change things in difficult situations" – reverse scored), and the self-monitoring scale (e.g., "When I feel that the image I am portraying isn't working, I can readily change it to something that does"). Given these correlations, this item seems to tap strategic efforts to monitor and then control others by adjusting one's behaviour. Somewhat surprisingly, however, this item does not seem to relate strongly to cultural empathy, perhaps suggesting that the item might tap strategic motivations rather than the empathic desire to conform to the needs of diverse others. However, this speculation should be explored in more detail.

The next item tapped one's perceived ability to manage conflict by promoting compromise, as shown in Table 78.

Table 78. Top 10 correlations between "When a conflict arises, I am confident in my ability to find a compromise that everyone can agree on" and the theoretically related scales

Theoretically Related Scale	*r*	*p*
Emotional Stability (ESC subscale)	0.46	< .001
Self-Efficacy	0.43	< .001
Influence and Persuasion	0.42	< .001
Resilience	0.41	< .001
Control (Cognitive Flexibility subscale)	0.40	< .001
Global Transformational Leadership	0.37	< .001
Alternatives (Cognitive Flexibility subscale)	0.35	< .001
Social Initiative (MPQ subscale)	0.35	< .001
Negotiating with Others	0.34	< .001
Conceptual Knowledge of Culture	0.33	< .001

This item was quite strongly correlated with an emotional stability subscale (containing items such as "I see myself as someone who remains controlled in tense situations," and with a scale measuring self-efficacy (i.e., "I can remain calm when facing difficulties because I can rely on my coping abilities") and another scale tapping the ability to influence and persuade others. This item was also significantly correlated with a resilience scale containing items such as "Under pressure, I stay focused and think clearly."

Altogether, then, this item seems to capture one's belief in one's self to handle difficult interpersonal situations, in part by generating alternatives and by managing stress adeptly.

The next IMPPaCTS item explores the skill of knowing how to make a connection with other people, as shown in Table 79.

Table 79. Top 10 correlations between "I know how to connect with most people" and the theoretically related scales

Theoretically Related Scale	*r*	*p*
Influence and Persuasion	0.47	< .001
Cultural Empathy (MPQ subscale)	0.39	< .001
Extraversion (Big Five subscale)	0.39	< .001
Social Initiative (MPQ subscale)	0.38	< .001
Openmindedness (MPQ subscale)	0.38	< .001
Global Transformational Leadership	0.36	< .001
Conceptual Knowledge of Culture	0.36	< .001
Negotiating with Others	0.35	< .001
Communication Skills	0.34	< .001
Resilience	0.32	< .001

Not surprisingly, the pattern of results for this item shows it to be most strongly related to influence and persuasion, to the ability to empathize with diverse others (e.g., "Understands other people's feelings," "Has an insight into human nature"), and to being an extraverted person (i.e., "…is outgoing, sociable") who shows initiative in social situations.

This item seems to tap the ability to be in touch with people during social interactions in order to understand and address their concerns.

The next IMPPaCTS item addressed the interpersonal competency of actively working to understand the interests and concerns of other people, as shown in Table 80.

Table 80. Top 10 correlations between "I seek opportunities to know more about other people" and the theoretically related scales

Theoretically Related Scale	*r*	*p*
Openmindedness (MPQ subscale)	0.55	< .001
Conceptual Knowledge of Culture	0.43	< .001
Cultural Empathy (MPQ subscale)	0.43	< .001
Social Initiative (MPQ subscale)	0.38	< .001
Negotiating with Others	0.37	< .001
Influence and Persuasion	0.37	< .001
Evaluating Beliefs and Assumptions (Self-Leadership subscale)	0.36	< .001
Self-Efficacy	0.35	< .001
Extraversion (Big Five subscale)	0.34	< .001
Communication Skills	0.32	< .001

This item was most strongly related with openmindedness (i.e., "…is curious," "Seeks contact with people from a different background") and with knowledge of (i.e., "I am aware of some of the ways nonverbal behaviours differ between cultures," an item on the conceptual knowledge of culture scale) and empathy for diverse others (i.e., "Pays attention to the emotions of others," an item on the cultural empathy MPQ subscale).

3.4.8 Excluded Variables

As noted earlier, two items in Version 1 of the IMPPaCTS scale did not seem to relate meaningfully to the factors stemming from the exploratory analysis, so they were removed. The first item was intended to capture the importance of having a strong moral compass when working in diverse environments, and the pattern of relationships with the theoretically related scales is shown in Table 81.

Table 81. Top 10 correlations between "I have a strong moral compass that governs how I act" and the theoretically related scales

Theoretically Related Scale	*r*	*p*
Agreeableness (Big Five subscale)	0.27	< .001
Conceptual Knowledge of Culture	0.21	.005
Global Transformational Leadership	0.20	.010
Resilience	0.17	.023
Alternatives (Cognitive Flexibility subscale)	0.16	.036
Evaluating Beliefs and Assumptions (Self-Leadership subscale)	0.15	.045
Conscientiousness (ESC subscale)	0.15	.058
Influence and Persuasion	0.14	.060
Openmindedness (MPQ subscale)	0.14	.069
Emotional Stability (ESC subscale)	0.12	.110

This item showed a significant correlation with the agreeableness subscale from the Big Five measure but had only weak relationships with other variables. Again, the conceptual content of this item may not have been directly represented in the theoretical scales.

The second IMPPaCTS item that was excluded was intended to address the ability of understanding the perspective of other people as a component of cross-cultural competence, as shown in Table 82.

Table 82. Top 10 correlations between "I'm good at understanding how another person might see the world" and the theoretically related scales

Theoretically Related Scale	*r*	*p*
Openmindedness (MPQ subscale)	0.32	< .001
Flexibility (MPQ subscale)	0.30	< .001
Conceptual Knowledge of Culture	0.29	< .001
Evaluating Beliefs and Assumptions (Self-Leadership subscale)	0.26	< .001
Negotiating with Others	0.26	< .001
Influence and Persuasion	0.26	< .001
Communication Skills	0.25	< .001
Agreeableness (Big Five subscale)	0.22	.004
Control (Cognitive Flexibility subscale)	0.21	.005
Social Initiative (MPQ subscale)	0.21	.006

This item was most strongly related to the openmindedness subscale (e.g., "Is fascinated by other people's opinions") and the flexibility subscale of the MPQ (e.g., "Feels uncomfortable in a different culture" – reverse scored), as well as the Conceptual Knowledge of Culture scale (e.g., "Individuals

from other cultures may make decisions in a different way than I do") and the evaluating beliefs and assumptions subscale of the Self-Leadership scale (e.g., "I think about and evaluate the beliefs and assumptions I hold"). This item appeared to assess an individual's openness to alternative perspectives.

Looking at the factor structure, this item was most closely associated with the Thinking skills factor. Rewording of this item so that it is more clearly identified with the underlying aspect which it appears to be tapping (i.e., openness to alternative perspectives) may cause this item to load significantly on the Thinking skills factor. The use of the word "good" may imply that one is conceited in their presumed grasp of other's viewpoints. Rather, if the item wording was changed to "I'm open to understanding how another person might see the world," then this would tap the flexibility that might underlie the Thinking skills factor.

3.5 Correlations between IMPPaCTS Subscales and Theoretically Related Scales[7]

Another analysis explored the relationship between the IMPPaCTS subscale indexes (e.g., for influence/leadership, motivation, etc.) and the index for each theoretically related scale. This would allow an exploration of whether relationships among scales and subscales capturing similar underlying constructs were actually stronger than those among scales and subscales that are not conceptually related. These results are shown in Table 83.

[7] Note that although this table is helpful for exploring general patterns among the scales and subscales, simultaneous understanding of the actual conceptual content of each is critical to understanding the pattern of correlations.

Table 83. Correlations between IMPPaCTS subscales and theoretically related scales

	Influence/ Leadership	Motivation	People Skills	Problem management/ Adaptability	Cultural Knowledge	Thinking Skills	Social Monitoring
Adjusting Emotions	0.24	0.20	**0.27**	**0.41**	**0.27**	**0.39**	**0.27**
BF Agreeableness	-0.06	0.07	**0.30**	0.13	0.01	**0.26**	0.16
BF Conscientiousness	0.18	**0.39**	0.17	**0.33**	0.02	0.10	0.20
BF Extraversion	**0.45**	0.21	**0.56**	**0.39**	0.24	0.21	**0.43**
CFI - Alternatives	**0.18**	**0.33**	**0.28**	**0.35**	**0.23**	**0.47**	**0.38**
CFI - Control	**0.35**	**0.38**	**0.41**	**0.52**	0.15	**0.30**	**0.44**
Communication Skills	**0.27**	**0.27**	**0.37**	**0.32**	0.22	**0.32**	**0.39**
Cultural Knowledge	**0.36**	**0.26**	**0.41**	**0.43**	**0.86**	**0.38**	**0.42**
ESC Conscientiousness	0.24	**0.51**	0.20	**0.41**	0.07	0.20	**0.25**
ESC Emotional Stability	**0.41**	**0.47**	**0.35**	**0.59**	0.22	**0.43**	**0.42**
GT Leadership	**0.30**	**0.37**	**0.37**	**0.42**	**0.27**	**0.29**	**0.42**
Influence & Persuasion	**0.50**	**0.36**	**0.5**	**0.47**	**0.29**	**0.38**	**0.55**
MPQ Cultural Empathy	0.17	**0.33**	**0.39**	**0.28**	0.16	**0.31**	**0.49**
MPQ Emotional Stability	**0.35**	0.23	**0.37**	**0.59**	**0.28**	**0.39**	**0.3**
MPQ Flexibility	0.15	0.12	**0.42**	**0.39**	**0.35**	**0.35**	**0.26**
MPQ Openmindedness	**0.28**	**0.33**	**0.45**	**0.41**	**0.52**	**0.47**	**0.52**
MPQ Social Initiative	**0.52**	**0.40**	**0.61**	**0.55**	**0.46**	**0.37**	**0.43**
Negotiation with Others	**0.34**	**0.27**	**0.35**	**0.39**	**0.39**	**0.28**	**0.48**
Relationship Building	**0.26**	**0.33**	**0.30**	**0.28**	0.21	0.25	**0.30**
Resilience	**0.35**	**0.44**	**0.36**	**0.58**	**0.28**	**0.45**	**0.41**
Self-Efficacy	**0.47**	**0.48**	**0.39**	**0.61**	**0.32**	**0.48**	**0.45**
Self-Monitoring	0.23	0.14	**0.32**	**0.44**	0.12	0.21	**0.41**
SL Evaluating Beliefs	**0.36**	**0.35**	**0.3**	**0.37**	**0.33**	**0.36**	**0.35**
SL Self-Observation	**0.27**	**0.42**	0.15	**0.27**	0.09	0.14	**0.25**
Tolerance for Uncertainty	0.03	-0.16	0.24	0.25	0.09	0.25	0.17

Note. Significant factor loadings are shown in bold ($p < .001$); BF = Big Five Inventory; CFI = Cognitive Flexibility Inventory; ESC = Emotional Stability/Conscientiousness Inventory; GT = Global Transformational; MPQ = Multicultural Personality Questionnaire; SL = Self-Leadership

Perhaps not surprisingly, measures of emotional stability and of the ability to adjust emotions were most strongly correlated with managing problems and adaptability.

This table shows that conscientiousness (as captured in the theoretically related scales) is most strongly related to motivation and to managing problems/adaptability. The measure of extraversion correlated most strongly with the people skills subscale, followed by influence/leadership. Agreeableness was most strong related to the people skill subscale.

The two subscales measuring cognitive flexibility showed the strongest link being between the subscale measuring the ability to generate alternatives and the thinking skills subscale. This seems to support our assertion that the thinking skills dimension seems to capture divergent thinking. Results showed that the

subscale measuring one's level of perceived control related most strongly to one's perceived ability to manage problems.

Items on the communication scale were most strongly correlated with social monitoring and people skills. Recall that the communication scale items seemed to be capturing the concept of adjusting one's position based on the other party.

The cultural knowledge scale administered was most strongly related to the IMPPaCTS items intended to capture cultural knowledge.

The theoretical scale capturing global transformational leadership showed significant relationships with all of the IMPPaCTS items. The strongest relationship was with problem management, but all correlations were in the middle range.

The influence and persuasion scale (namely, the Upward Influence Scale) showed the strongest relationships with the influence/leadership IMPPaCTS subscale and the people skills subscale (tied), followed by the problem management/adaptability subscale.

Flexibility (as measured by the MPQ) was most strongly related to the IMPPaCTS people skills subscale, with the problem management/adaptability subscale the next most related.

The MPQ openmindedness subscale correlated significantly with all of the IMPPaCTS subscales, suggesting that openmindedness is closely related to many of the competencies in IMPPaCTS. The strongest relationship was with cultural knowledge and social monitoring, followed by thinking skills.

Cultural empathy (as measured by the MPQ) showed the strongest (and significant) correlation with the social monitoring IMPPaCTS subscale. Interestingly, responses to the cultural empathy items did not relate to cultural knowledge.

The MPQ scale measuring social initiative was quite strongly related to all of the IMPPaCTS subscales and showed the strongest relationship with people skills, followed by problem management.

Negotiating with others was significantly correlated with all of the IMPPaCTS subscales but was most strongly related to social monitoring.

The scale measuring relationship building, in general, seemed to show somewhat weaker correlations with the IMPPaCTS scale, although it did have significant relationships with 5 of the 7 IMPPaCTS subscales. The strongest relationships were with motivation with people skills followed by social monitoring.

The measure of resilience correlated significantly with all of the IMPPaCTS dimensions but seemed to have been best captured by the problem management/adaptability subscale of IMPPaCTS.

The measure of self-efficacy was significantly related to all the IMPPaCTS subscales, but was most strongly related to the ability to manage problems and to adapt as necessary, followed by motivation and thinking skills.

The measure of self-monitoring was significantly related to problem management/adaptability, social monitoring and people skills.

The theoretical subscale rated to evaluating one's beliefs (Self Leadership Scale) was significantly consistently related to all of the IMPPaCTS subscales, but no one relationship was dominant. The self-observation subscale (Self Leadership Scale) showed the strongest relationship with the motivation subscale from IMPPaCTS.

The theoretically related scale entitled "tolerance for uncertainty" was not significantly correlated with any of the IMPPaCTS factors in the table above, even though it represents an important aspect of motivation when explored at the level of the individual item (see Table 56).

Overall, then, the analyses within this section provide good initial evidence that this first iteration of the IMPPaCTS scale seems to relate meaningfully to the cross-cultural competencies that it was intended to measure.

4. Discussion and Recommendations

This chapter provides an integration and summary of the findings of this study. The report concludes with recommendations for future research efforts in this area.

4.1 Discussion

The goal of this research was to create and test new scale items that would form a new scale to measure 3C in complex environments. As noted earlier, our approach was to develop a relatively small scale that could still be narrowed, as a scale with 10-15 items would perhaps be ideal in high-tempo environments if it could be shown to be valid. This size of scale seems in keeping with many of the applied scales noted in the literature as we searched for and retrieved theoretically related scales.

As noted earlier, we constrained our efforts in defining the theoretically related scales to those that we believed would be most relevant and accepted by the military participants to be employed in the first iteration of testing the IMPPaCTS questionnaire. This (and the expected time limitations of participants) constrained our choice of available scales. But, we believed that ensuring maximal cooperation of participants will ultimately yield more valuable information than expecting them to complete scales that they saw as irrelevant or too academic.

The results showed that most of the theoretically related scales performed relatively well. Although there was variance among the scales, items on the scales were generally rated above the midpoint of the scale (indicating moderate to good agreement). Reliabilities for all of the scales and subscales were above .75 and many were above .80. However, as noted in the report, some of the theoretically related scales showed items with low item-total correlations. Specifically, one of the cognitive flexibility items, one of the items in the conceptual knowledge of culture, and multiple items in two of the MPQ subscales (cultural empathy and social initiative) showed unacceptably low item-total correlations.

The exploratory factor analysis of the IMPPaCTS scale arrived at a 7-factor model that provided a good fit to the data and seemed to group together in what we judged to be an imperfect, but theoretically meaningful way. The factor structure that emerged was different from the framework used to guide the development of the items in preparation for the study. From our perspective, this was not surprising, given that we had planned to use exploratory rather than confirmatory factor analyses to understand the patterns that emerged in the data. The reliabilities for the subscales formed by the EFA ranged between .70 (people skills) and .87 (cultural knowledge). The overall measure had a reliability of .93.

Looking at the level of individual IMPPaCTS items helped to elucidate the constructs that each item tapped most prominently. These analyses showed that the majority of items were most strongly correlated with theoretically related scales that made sense given the theoretical content of the item. Recall that at the start of the research, each IMPPaCTS item was posited to relate to specific constructs in the theoretically related scales. These predictions are shown in Table 9 of this report. Table 84 compares the initially posited cross-cultural competencies believed to underlie each item with the relationship of each item to its most closely associated theoretically related scales.[8]

[8] Note that Table 84 provides the same information as shown within Tables 50 to 80, but presents the IMPPaCTS items (Version 2) side-by-side for ease of consideration with the highest 5 correlations.

Table 84. Comparison of posited and actual IMPPaCTS item relationships

Item	*Underlying cross-cultural competence (Posited)*	*Top 5 correlations with theoretically related scales (Actual)*
Influence/Leadership		
I can usually get people to do what I want them to do.	Influence and persuasion	Social initiative, influence and persuasion, extraversion, self-efficacy, emotional stability (ESC)
If I'm in a group of people, I make sure my views are known.	Leadership/Influence	Evaluating beliefs and assumptions (self-leadership), extraversion, influence and persuasion, self-efficacy
I get people to listen to me when I know what needs to be done.	Leadership - Establishing authority	Social initiative, self-efficacy, influence and persuasion, emotional stability (ESC), resilience
Motivation		
I like to get things done quickly and efficiently.	Initiative/ Conscientiousness	Conscientiousness (ESC), self-efficacy, self-observation, conscientiousness (BF), emotional stability (ESC)
I'm a "get it done" kind of person.	Initiative	Conscientiousness (ESC), conscientiousness (Big 5), self-efficacy, emotional stability (ESC), resilience
I feel more comfortable when I have a clear plan.	Tolerance for Uncertainty	Tolerance for uncertainty, flexibility (negative), self-monitoring, self-observation, extraversion (BF)
I'm constantly looking for new things to learn.	Motivation to learn/ Openmindedness	Openmindedness, self-efficacy, conceptual knowledge of culture, cultural empathy, social initiative
I am confident in my ability to solve most problems that come my way.	Self-Efficacy/Problem-solving	Emotional Stability (ESC), resilience, self-efficacy, control (cognitive flex), conscientiousness (ESC)
It is important for me to establish cooperation and trust when working with others.	Leadership	Social initiative, influence and persuasion, self-efficacy, cultural empathy, resilience
People Skills		
I am generally an outgoing person.	Extraversion	Extraversion (BF), social initiative, influence and persuasion, flexibility, self-efficacy
I like interacting with different types of people from different backgrounds.	Openmindedness, social initiative	Openmindedness, conceptual knowledge of culture, flexibility, social initiative, cultural empathy
I have strong communication skills.	Communication Skills	Social initiative, extraversion, influence and persuasion, communication skills, control (cognitive flexibility)
I tend to get along very well with others.	Agreeableness	Agreeableness (BF), influence and persuasion, emotional stability, social initiative, self-efficacy
What's right for me is not necessarily right for everyone in the world.	Cognitive flexibility/ Perspective-taking	Influence and persuasion, global transformational leadership, control (cognitive flexibility), relationship building, negotiating with others
Problem Management/Adaptability		
I keep my emotions in check when tensions are running high.	Emotional Stability/ Control	Emotional stability (MPQ), resilience, self-efficacy, emotional stability (ESC), adjusting emotions
I tend to be seen as a natural leader by others.	Leadership	Social initiative, emotional stability (MPQ), self-efficacy, influence and persuasion, emotional stability
I can deal effectively with any challenge that I encounter.	Resilience	Resilience, self-efficacy, emotional stability (ESC), emotional stability (MPQ), social initiative
I am comfortable managing conflict.	Conflict management	Self-efficacy, social initiative, emotional stability (ESC), resilience, emotional stability (MPQ)

Item	*Underlying cross-cultural competence (Posited)*	*Top 5 correlations with theoretically related scales (Actual)*
Cultural Knowledge		
I understand how the economy works in other countries.	Economics as cultural knowledge	Conceptual knowledge of culture, social initiative, openmindedness, negotiating with others, self-efficacy
I know about the cultural values and religious beliefs of other cultures.	Religion/Values as cultural knowledge	Conceptual knowledge of culture, openmindedness, social initiative, negotiating with others, flexibility
I follow international politics.	Politics as cultural knowledge	Conceptual knowledge of culture, openmindedness, social initiative, flexibility, evaluating beliefs and assumptions
I am aware of the different factors that influence decision making in other cultures.	Decision-making as cultural knowledge	Conceptual knowledge of culture, openmindedness, social initiative, negotiating with others, relationship building
I am aware of some of the different social norms of other cultures.	Social norms/nonverbal behaviour as cultural knowledge	Conceptual knowledge of culture, openmindedness, social initiative, negotiating with others, flexibility
Thinking Skills		
I try to see things from an angle that's slightly different from other people.	Cognitive Flexibility	Openmindedness, alternatives (cognitive flexibility), flexibility, conceptual knowledge of culture, resilience
I approach problems from many angles to find the best solution.	Problem-Solving/Cognitive Flexibility	Alternatives (cognitive flexibility), self-efficacy, resilience, influence and persuasion, openmindedness
I'm the kind of person who manages change well.	Flexibility	Emotional stability (MPQ), self-efficacy, emotional stability (ESC), adjusting emotions, resilience
Social Monitoring		
I try to adapt my approach to the person that I'm working with.	Adaptability	Cultural empathy, openmindedness, negotiating with others, alternatives (cognitive flexibility), influence and persuasion
I adjust my behaviour to suit the people I am working with.	Self-Monitoring/Regulation	Influence and persuasion, control (cognitive flexibility), self-monitoring, extraversion, negotiating with others
When a conflict arises, I am confident in my ability to find a compromise that everyone can agree on.	Conflict Management/Negotiation	Emotional stability, self-efficacy, influence and persuasion, resilience, control (cognitive flexibility)
I know how to connect with most people.	Relationship Building	Influence and persuasion, cultural empathy, extraversion, social initiative, openmindedness
I seek opportunities to know more about other people.	Social Initiative	Openmindedness, conceptual knowledge of culture, cultural empathy, social initiative

Furthermore, as Table 84 shows, there was considerable conceptual overlap among the items that the EFA showed as sharing a common underlying factor, as follows:

- Items loading on the IMPPaCTS influence and leadership subscale showed the strongest relationships to social initiative, the influence and persuasion scale (Upward Influence Scale), self-efficacy and extraversion.
- Items loading on the IMPPaCTS motivation subscale were most strongly correlated with conscientiousness, self-efficacy, emotional stability and resilience.
- Items loading on the IMPPaCTS people skills subscale were most strongly correlated with extraversion, social initiative, influence and persuasion and flexibility.

- Items loading on the IMPPaCTS problem management/adaptability subscale were most strongly correlated with self-efficacy, emotional stability, resilience and social initiative.
- Items loading on the IMPPaCTS cultural knowledge subscale were most strongly correlated with conceptual knowledge of culture, openmindedness, social initiative, negotiating with others and flexibility.
- Items loading on the IMPPaCTS thinking skills subscale were most strongly correlated with self-efficacy, openmindedness, the ability to generate alternatives and resilience.
- Items loading on the IMPPaCTS social monitoring subscale were most strongly related to influence and persuasion (Upward Influence Scale), openmindedness, cultural empathy, and negotiating with others.

Nonetheless, it is also clear that the draft factor structure that we propose in this report as a result of the EFA is in no way perfect. We recognize that working to define factor structures within scales is ultimately a somewhat subjective and interpretive activity. Our purpose in working to define a structure that we believe to be plausible is to advance understanding of how the items might group rather than to argue that our proposed structure is "the right one." Other researchers may see the data differently, and may advance other structures that they see as most meaningful. This is certainly as it should be. In the end, we would argue that the focus should ultimately be on providing the CF with a pragmatic measure that could help them better identify and measure 3C.

Looking forward, we advocate several refinements to the scale that will hopefully bring the scale to a stronger and more coherent structure.

4.2 Recommendations for Future Research

Having explored the findings of the current research, it is important to consider how to further develop the IMPPaCTS scale and to identify future research that might be helpful to understand the impact of 3C.

As noted throughout this report, the IMPPaCTS scale (Version 2) that emerged from our analyses will still require further refinement. For example, although the factor structure seemed to converge in a meaningful way, the cross-loadings evident for some of the items suggest that they might need to be reworded slightly to more fully distinguish them from the other factors on which they are currently load. Looking at all the information available about each item within this report, we analysed each of the current items in the IMPPaCTS scale, and arrived at suggested alterations that should be considered as future research proceeds.

Item 15 ("I get people to listen to me when I know what needs to be done") loaded on both the influence/leadership factor and the motivation factor. Using the term "I get" could have primed participants to the pro-active aspect of this item, thus creating an association with the motivation factor. Rewording this item to decrease the action aspect of the item (e.g., "What I say usually holds weight for people") might create a clearer distinction for this item as an influence/leadership item.

Item 5 ("I feel more comfortable when I have a clear plan") was initially developed as an indicator for level of tolerance for uncertainty (reverse scored). However, it appeared that most participants (139 out of 171) agreed or strongly agreed with this statement. This item, therefore, showed a very low correlation with other items in the IMPPaCTS scale. In the end, while there may have been a range of tolerance for uncertainty among the participants, most participants felt *more comfortable* when they had a clear plan. That does not necessarily indicate that they would feel *uncomfortable* if there was no clear plan. Refining this item (e.g., "I feel uncomfortable unless I have a clear plan" – reverse scored) might more clearly identify a tolerance (or intolerance) for uncertainty.

Item 10 ("I'm constantly looking for new things to learn") loaded most strongly on the motivation factor, but also loaded significantly on both the cultural knowledge and social monitoring factors. A rewording of this item to "I seek out knowledge" should more clearly emphasize the active motivation to learn that Brown and Adams (2011) suggested was a key aspect of the motivation aspect of 3C.

While item 14 did load uniquely on the motivation factor, it did not seem to fit precisely the conceptual aspect of motivation within 3C. As with item 15, the wording of the item (i.e., "establish cooperation") may have emphasized the pro-active aspect of building trust and cooperation. Bringing trust and cooperation to the beginning of this item (e.g., "Cooperation and trust are important to me when working with others") may shift the emphasis of this item to one that fits more clearly within people skills.

Item 6 ("I like interacting with different types of people from different backgrounds") loaded strongly on people skills, but also loaded significantly on the factor believed to be tapping divergent thinking. Rewording the item (e.g., "I can effectively interact with people from different backgrounds") would help to emphasize the people skills aspect of this item.

Item 31 ("I have strong communication skills") loaded significantly on both people skills and influence/leadership, which is not surprising as one would require strong communication skills (broadly speaking) to be both good at interacting with others and an effective leader. Rewording this item to emphasize the people skills aspect of communication skills (e.g., "I am comfortable talking to people") may clarify what this item is meant to tap.

Item 11 ("I tend to be seen as a natural leader by others") loaded somewhat more strongly on the problem management/adaptability factor than it did on the influence/leadership factor. As the interpretation of "natural leader" might have been seen as vague, thus leading to the cross-loading, we recommend rewording this item to emphasize the influence/leadership aspect it was originally designed to measure (e.g., "I always seem to end up in charge of others").

While item 26 ("I try to see things from an angle that's slightly different from other people") loaded strongly and uniquely on the thinking skills factor, the wording of the item seemed slightly awkward. The clause "from other people" may be unnecessary and removing it may create an item that is simpler for users of the scale to read and understand.

Item 3 ("I'm the kind of person who manages change well") loaded somewhat weakly on the thinking skills factor. However, it had strong correlations with items on the problem management/adaptability factor and conceptually fits better in that factor. Future iterations of this scale should attempt to highlight the problem management/adaptability aspect of this item by being more direct in its wording (e.g., "I manage change well").

Finally, item 30 ("I know how to connect with most people") currently loads almost equally strongly on the social monitoring and people skills factors. Theoretically it was designed to tap into the people skills aspect of 3C. In the future, this item might be reworded in order to more clearly emphasize the people skills aspect of the item (e.g., "I can to connect with most people").

As a quick reference, Table 85 summarizes the suggested alterations that might be incorporated into future versions of the IMPPaCTS scale.

Table 85. Suggested alterations to IMPPaCTS (Version 2)

IMPPaCTS subscale	Item #	Item Wording	Problems and required alterations	Suggested rewording
Influence/ Leadership	32	I can usually get people to do what I want them to do.		
Influence/ Leadership	33	If I'm in a group of people, I make sure my views are known.		

IMPPaCTS subscale	Item #	Item Wording	Problems and required alterations	Suggested rewording
Influence/ Leadership	15	I get people to listen to me when I know what needs to be done.	Cross-loaded with motivation – refine wording to emphasize influence and lower motivational content	"What I say usually holds weight for people."
Motivation	8	I like to get things done quickly and efficiently.		
Motivation	9	I'm a "get it done" kind of person.		
Motivation	5	I feel more comfortable when I have a clear plan.	Low correlation with other items in the subscale – refine wording	"I feel uncomfortable unless I have a clear plan."
Motivation	10	I'm constantly looking for new things to learn.	Multiple cross loadings with cultural knowledge and social monitoring – try to emphasize motivation only	"I seek out knowledge."
Motivation	19	I am confident in my ability to solve most problems that come my way.		
Motivation	14	It is important for me to establish cooperation and trust when working with others.	Conceptual fit is not great – try to de-emphasize the motivational content to push toward people skills	"Cooperation and trust are important to me when working with others."
People Skills	1	I am generally an outgoing person.		
People Skills	6	I like interacting with different types of people from different backgrounds.	Cross loading with thinking skills – try to emphasize people skills	"I can effectively interact with people from different backgrounds."
People Skills	31	I have strong communication skills.	Cross loading with influence/leadership – try to clarify as a people skill by providing stronger link to what communication skills look like	"I am comfortable talking to people."
People Skills	2	I tend to get along very well with others.		
People Skills	27	What's right for me is not necessarily right for everyone in the world.		
Problem Management/ Adaptability	4	I keep my emotions in check when tensions are running high.		
Problem Management/ Adaptability	11	I tend to be seen as a natural leader by others.	Cross loading with, and fits better in, influence/leadership subscale – reword to emphasize influence and leadership	"I always seem to end up in charge of others."
Problem Management/ Adaptability	12	I can deal effectively with any challenge that I encounter.		
Problem Management/ Adaptability	16	I am comfortable managing conflict.		

IMPPaCTS subscale	Item #	Item Wording	Problems and required alterations	Suggested rewording
Cultural Knowledge	23	I understand how the economy works in other countries.		
Cultural Knowledge	21	I know about the cultural values and religious beliefs of other cultures.		
Cultural Knowledge	24	I follow international politics.		
Cultural Knowledge	20	I am aware of the different factors that influence decision making in other cultures.		
Cultural Knowledge	22	I am aware of some of the different social norms of other cultures.		
Thinking Skills	26	I try to see things from an angle that's slightly different from other people.	It is unclear whether the final clause in this item "that's slightly different from other people" is a critical part of this item, or whether simply seeing the world differently is critical	"I try to see things from an angle that's slightly different."
Thinking Skills	17	I approach problems from many angles to find the best solution.		
Thinking Skills	3	I'm the kind of person who manages change well.	Seems to fit better conceptually with problem management/adaptability items	"I manage change well."
Social Monitoring	25	I try to adapt my approach to the person that I'm working with.		
Social Monitoring	28	I adjust my behaviour to suit the people I am working with.		
Social Monitoring	18	When a conflict arises, I am confident in my ability to find a compromise that everyone can agree on.		
Social Monitoring	30	I know how to connect with most people.	Currently cross-loading with people skills factor. Suggest rewording to draw closer to that factor	"I can connect with most people."
Social Monitoring	7	I seek opportunities to know more about other people.		

Obviously, it would be ideal to work to refine these items and then test them (and the proposed factor structure) on another sample.

For the longer term, confirmatory factor analysis conducted on an independent sample would be required to strengthen the confidence in the scale. Once these issues are addressed, it would be ideal to continue to validate the scale, and to explore how it performs in a wider range of settings.

This research also shows the potential limitation of self-report measures when working to understand 3C. As noted earlier, it is possible that people who are inherently low in 3C may be the least able to identify this. This suggests that using methods and approaches that include other perspectives on an individual's 3C may be important. For example, the original intent of this research was to attempt to validate the self-reported competence of CF personnel against ratings provided by their commanders or

supervisors. Unfortunately, due to limited resources and other constraints, it was not possible to include such ratings. For the future, it would be important to attempt to explore potential differences between personnel who are actually at a high level of 3C and those personnel who simply believe they are highly competent. One might expect that how they treat their counterparts during a collaborative effort may be differ considerably.

The key to such a measure, however, is whether it truly captures 3C in diverse environments, and helps to understand how people are likely to perform when working with other people. These issues can hopefully be explored in more detail in conjunction with the results of the scenario-based study (ref) as future research proceeds.

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(U) The aim of this report was to develop a measure of the seven cross-cultural competencies identified in earlier research (Brown & Adams, 2011) as relevant to collaboration in a comprehensive environment (Individual differences, Motivation, Professionalism, Problem-solving, Cultural knowledge, Thinking skills, and Social skills). The IMPPaCTS measure (Version 1) was administered to 171 Canadian Forces (CF) personnel along with a series of theoretically related measures hypothesized to be related to the various proposed subscales. Exploratory factor analysis revealed a 7- factor structure that fit the data well, and required re-definition of the factors to form IMPPaCTS Version 2, as Influence/leadership, Motivation, People skills, Problem management/adaptability, Cultural knowledge, Thinking skills, and Social monitoring. Exploring the relationship of each IMPPaCTS item individually against theoretically related scales showed a good deal of conceptual consistency within the subscale groupings. This suggests that even as some items require revision to eliminate cross-loadings and to clarify their targeted competency, the IMPPaCTS measure does seem to show some promise as a short measure of cross-cultural competence for applied contexts.

(U) NA

14. KEYWORDS, DESCRIPTORS or IDENTIFIERS (Technically meaningful terms or short phrases that characterize a document and could be helpful in cataloguing the document. They should be selected so that no security classification is required. Identifiers, such as equipment model designation, trade name, military project code name, geographic location may also be included. If possible keywords should be selected from a published thesaurus, e.g. Thesaurus of Engineering and Scientific Terms (TEST) and that thesaurus identified. If it is not possible to select indexing terms which are Unclassified, the classification of each should be indicated as with the title.)

(U) cross-cultural competencies; Canadian Forces; exploratory factor analysis; comprehensive approach; IMMPaCTS measure