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A renewed perspective on the measurement of cross-cultural competence: An approach through personality traits and cross-cultural knowledge

Abstract

The concept of cross-cultural competence (CCC) has generated considerable interest in the area of international business, but research still lacks solid measurement tools for this multidimensional construct. CCC is frequently operationalized with its components such as personality traits, but to what extent are those really linked to another dimension of CCC and therefore indicative of cross-cultural knowledge? This study combines measurement tools for two components of CCC: personality trait scales and critical incident technique. The tools are validated on a multinational sample of a working population. A structural model shows that most of the personality traits generally presented as predictive of CCC, do not significantly determine cross-cultural knowledge.

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1. INTRODUCTION

Over the last few decades, cross-cultural competence (CCC) has generated considerable and continually growing interest. Globalization has led to an increase in cross-cultural encounters. Yet, many of these encounters are at least partially unsuccessful. Scholars and practitioners in the fields of international business, communication, and education have considered that CCC is necessary to avoid those failures. Consequently, numerous scholarly contributions have been made in this area (Spitzberg & Changnon, 2009).

Unfortunately, this interest in CCC has not led to a significantly better understanding of the concept (Van de Vijver & Leung, 2009). Even though scholars have produced numerous frameworks, definitions, and approaches related to CCC, there is yet no commonly accepted conceptualization. The fuzziness of the developments on CCC has even led scholars to question the usefulness of the concept itself (Livian, 2011).

In line with Van de Vijver and Leung (2009), we argue that the understanding of CCC could be improved through confrontation with empirical data, which have been realized only in a few publications. Hence, we aim at contributing to the conceptualization of CCC through questioning measurement tools. CCC is frequently seen as being made of different components such as knowledge, skills, abilities, and other personal characteristics (KSAOs, Caligiuri, 2006).

Empirical measures, however, generally only operationalize CCC with one of its dimensions: “other personal characteristics” such as personality traits and attitudes. It appears that these measures have rarely been compared to measures of other components of CCC. In fact, we do not really know to what extent the measures of personality traits and attitudes could grasp CCC in the context of international business and which personality traits mentioned in the literature really determine other components of CCC.

Thus, this study raises the question of whether one component of CCC influences another one. More precisely, we analyze the extent to which personality traits influence cross-cultural knowledge (CCK) in international business. To do so, we first review the literature on CCC and the existing measures of it. Then, we present two different measures of CCC. The first one being based on personality trait scales, while the second one relies on the critical incident technique, and the way we tested the link between them using a survey. Finally, we present our results within a structural model and discuss the contributions and limitations of our research.

2. CROSS-CULTURAL COMPETENCE: CONCEPTUALIZATIONS AND RELATED MEASUREMENT TOOLS

Numerous contributions, including literature reviews, on CCC in the field of international business have been published during the last 15 years. However, this abundance of publications suffers from ambiguous construct definitions and poor integration (Ang, Van Dyne, Koh, Ng, Templer, Tay & Chandrasekar, 2007). A striking example is the lack of connections between literature on CCC, intercultural competence, and cultural intelligence (CQ). Spitzberg and Changnon (2009) never mentioned the term “CCC” in their literature review, while Johnson, Lenartowicz, and Apud (2006) quote “intercultural competence” in only one sentence referring to Hofstede’s (2001) formulation. More recent literature (e.g. Ang et al., 2007, Thomas et al., 2008) adds a third wording “cultural intelligence.” However, no striking differences appear between this last construct based on the notion of intelligence and competence in the area of cross-cultural interaction: both involve the understanding of specificity of cross-cultural interaction and the capacity to adapt one’s behavior to this specificity. It appears that CQ largely overlaps with a forth concept, “global mindset” (Andresen & Bergdolt, 2017). Although the definitions largely converge, scholars not only use different terms for the concept of CCC but also hardly ever integrate contributions using a different terminology. In contrast, we consider that these concepts are very close. We use the term “cross-cultural competence” here but include literature on intercultural competence and CQ within this wording.

Spitzberg and Changnon’s (2009) presentation of 22 models of CCC makes evident that conceptualizations are highly diverse in their disciplines and terminologies and their scholarly and practical objectives. The main categories of models are as follows: (1) compositional models listing elements/components of CCC such as individuals’ knowledge and behavior (e.g. Deardorff, 2006), (2) co-orientational and adaptational models focusing on communication and interaction between people from different cultures (e.g. Fantini, 1995), and (3) developmental models including successive competence levels that can be reached through learning processes (e.g. Bennett, 1986; Hammer, Bennett & Wiseman, 2003). In other words, the huge majority of contributions on CCC define the concept in terms of components, interaction processes, or levels. Among these, the compositional conceptualizations predominate in the subfield of CCC, and this approach has been adopted by the subfield of CQ. This paper also adopts a componential

approach to CCC. In the following subsections, we present and discuss the componential definitions and measures of CCC.

2.1. Componential definitions of CCC

Componential definitions of CCC provide lists of components that together are thought to constitute the concept. Four types of components of CCC have been identified (Ruben, 1989): attitudes, personality traits, cognitive abilities and skills, and actual behavior. These types of components roughly correspond to KSAOs (Caligiuri, 2006), with the particularity that abilities are addressed through actual behavior and other personal characteristics through specific personality traits and attitudes. For each type of component, Spitzberg and Changnon (2009) list dozens of elements mentioned in the literature. They argue that “the more a model incorporates specific conceptualization of interactants’ motivation, knowledge, skills, context, and outcomes, in the context of an ongoing relationship over time, the more advanced the model” (2009: 44) of CCC. However, the authors also recognize that “there is a need to provide a more parsimonious model” (2009: 45) than the list of 300-plus terms and concepts related to CCC they provide. In the field of international business, CCC has been defined as “an individual’s effectiveness in drawing upon a set of knowledge, skills, and personal attributes to work successfully with people from different national cultural backgrounds at home or abroad” (Johnson et al., 2006: 530). In other words, CCC includes the ability to draw on personal resources and traits to understand the specifics of intercultural interaction and to adjust one’s behavior to these specifics.

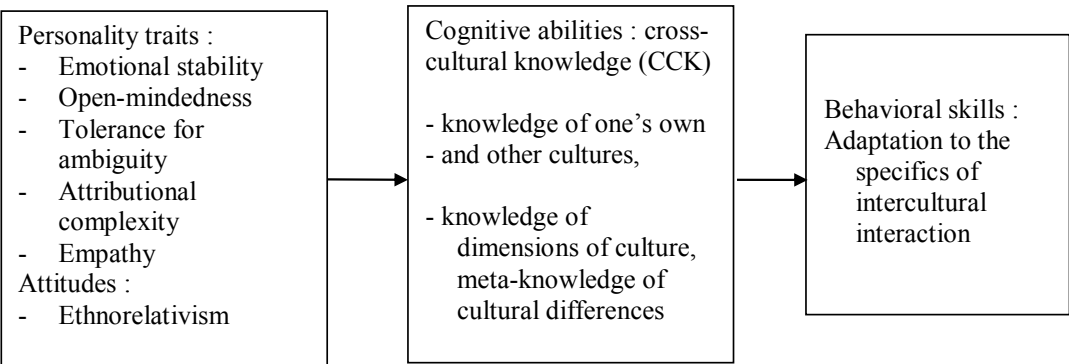
Personality traits and attitudes that are most frequently quoted in the literature (e.g. Black, 1990; Caligiuri, 2006; Cui & Van den Berg, 1991; Dirks, 1995; Johnson et al., 2006; Spitzberg & Changnon, 2009; Van der Zee & Van Oudenhoven, 2001) as being strongly linked or equivalent to CCC are open-mindedness (or openness), absence of ethnocentrism, sociability (or extraversion), emotional stability, self-confidence, empathy, attributional complexity, and tolerance for ambiguity. Some of them are stable personality traits (openness and extraversion are two of the “big five” personality traits), while others such as ethnocentrism and empathy are more specific attitudes (Shaffer et al., 2006).

Cultural intelligence is defined as the “capability to function effectively in culturally diverse settings” (Ang et al., 2007: 335). It includes at least the following three components: metacognitive, cognitive, and behavioral CQ (Thomas et al., 2008). Some scholars (among which

Ang et al., 2007) add a fourth component motivational CQ. Ang et al. (2007) argued that CQ and CCC are entirely different constructs. In contrast and as stated earlier, we consider instead that they are very close: both involve the understanding of specificity of cross-cultural interaction and the capacity to adapt one’s behavior to this specificity.

The components of CCC included in this definition of CCC can be represented as shown in Figure 1. The figure does not include successful work with people from other cultural backgrounds as this is an expected consequence of CCC in international business but is not one of its components.

Figure 1: Components of cross-cultural competence



2.2. Existing componential measurement scales of CCC

The field of CCC lacks confrontation with empirical data. However, various measures of constructs related to CCC exist and have been reviewed by Van de Vijver and Leung (2009) and Bückner and Poutsma (2010), among others. Although some measure “levels” reached in CCC (Hammer, Bennett & Wiseman, 2003), most focus on components of CCC. In this article, the Intercultural Sensitivity Scale (ISS), Multicultural Personality Questionnaire (MPQ), and Cultural Intelligence Scale (CQS) are described in detail. We focus on these measurement tools because they have been developed and used in scholarly research, presented and discussed in academic journals, and reused and extended by other authors, thus making them well known in the field. The ISS (Chen & Starosta, 2000) measures *attitudes* toward cross-cultural situations such as motivation and engagement. It is composed of five emotional dimensions of CCC: respect for cultural differences, interaction engagement, self-confidence, enjoyment, and attentiveness. Each subscale is composed of three to seven items. The scale has been tested on a student sample with

an average age of 20 years and shows good reliability (Cronbach's alpha of 0.89 according to Graf & Harland, 2005).

Van der Zee and Van Oudenhoven's (2001) MPQ measures five *personality traits*: emotional stability, social initiative, open-mindedness, cultural empathy, and flexibility. Each trait is measured with 13–20 items, and the scale shows high reliability (Cronbach's alpha between 0.81 and 0.91).

The CQS (Ang et al., 2007) measures four dimensions of CQ: metacognitive, cognitive, motivational, and behavioral CQ, with four to six items each and good reliability (Cronbach's alpha ranging between 0.81 and 0.89). The serious limitations of this framework are that knowledge is not situated in a context, and that evaluations are self-assessed. For example, respondents rate themselves on items like “I am confident that I can socialize with locals in a culture that is unfamiliar to me” (motivational) or “I know the cultural values and religious beliefs of other cultures.” It is not specified how many other cultures are addressed in the item; some respondents can think about two other cultures, others about five or fifty, which represents a bias. A respondent with international experience is likely to be more aware of complexity of cultural differences and would consequently rank him- or herself lower than a respondent with no international experience and a naïve vision of other cultures.

Various other measures have been developed and patented by consulting companies who then charge clients for the use of their tools. Details concerning scale development (item generation, and purification, validity/reliability indicators, etc.) have rarely been published in refereed journals. These scales are often not available, and their scientific validity may be questioned. They are not presented in this paper for these reasons.

2.3. The link between personality and CCC in the literature

Ang et al. (2007: 340) criticized the current state of research stating that “most intercultural competencies scales mix ability and personality.” Indeed, many scales aim to measure personality traits that are said to be linked to CCC, and CCC is sometimes reduced to personality. In Caligiuri and Tarique's study (2012), dynamic CCCs were considered equivalent with three personality traits: tolerance of ambiguity, (absence of) ethnocentrism, and cultural flexibility. Other studies question the link between personality as a whole (the “big five” personality traits: openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism) and the

outcomes in cross-cultural situations: Caligiuri (2000) related them to the performance of foreign assignees and Ang, Van Dyne, and Koh (2006) related them to the construct of CQ. Both studies showed that all the “big five” do not significantly determine cross-cultural success or intelligence. We therefore argue that the personality traits to be considered as components of CCC differ from the “big five” and are to be identified depending on the relevant literature. MacNab and Worthley (2012) concluded that among several individual attributes, self-efficacy strongly predicts the development of CQ capacities.

2.4. Measuring the cognitive dimension of CCC, i.e. CCK, by using the critical incident technique

A well-known approach to measure the cognitive dimension of CCC is the culture assimilator. It is based on the critical incident technique developed by Flanagan (1954). Critical incidents are short stories of cross-cultural situations and encounters. They are considered critical because they are likely to be interpreted differently by people from different cultures and because they tell of misunderstandings that might result in conflict. Each critical incident is followed by several possible answers (in most tools, four) that include an interpretation of the situation, potential courses of action, or future events. “Wrong” answers reflect ethnocentric considerations from other cultures or a stereotyped worldview. Several “right” answers are proposed to avoid an isomorphic presentation of cultures and to place value on tolerance for ambiguity.

Culture assimilators are either culture specific (all the critical incidents concern one particular “host” culture) or culture general (including critical incidents in various cross-cultural settings). Culture-general assimilators are less common; the most frequently quoted one was developed by Brislin (1986: 218). Ideally, they are based on the dimensions of culture theory (Bhawuk, 2001) developed by Hofstede (1980, 2001) and others. Initially developed for training purposes, culture assimilators also represent a good tool for measuring CCK because they can capture tacit knowledge linked to CCC (Johnson et al., 2006).

2.5. The need for a multidimensional but not self-assessed measure of CCC

Leung and Van de Vijver (2008) argued that the conceptual fuzziness of the field of CCC is in many ways related to a lack of clear insight into the components of CCC and the relationships among them. Testing the concept empirically not only allows for the analysis of contingencies,

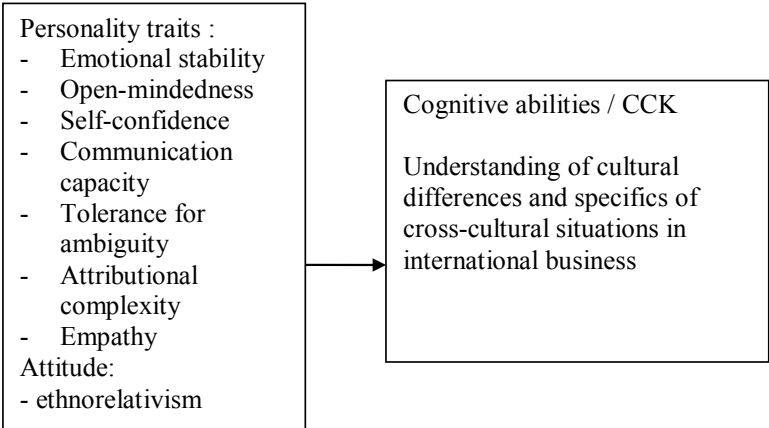
determinants, and outcomes of CCC in further research but also contributes clearer insights as to what CCC really is. However, little effort has been made to measure theory-based models and systematically test the validity and cross-cultural generality of the models posited to date (Spitzberg & Changnon, 2009).

CCC is a multidimensional construct including several components such as personality traits, attitudes, knowledge, and skills. Existing measures reviewed above have the following drawbacks: (1) many focus on only one component of CCC (like personality: Van der Zee & Van Oudenhoven, 2001, or attitudes: Chen & Starosta, 2000), (2) many lack empirical support, especially empirical support beyond student samples, (3) and others are self-assessed and therefore likely to be biased (Ang et al., 2007).

Developing a satisfactory measure to assess CCC is a long overdue endeavor (Johnson et al., 2006). Although empirical data are present in only a small percentage of papers on CCC, “there is almost no empirical work in which the various models that have been proposed are compared and tested” (Van de Vijver & Leung, 2009: 406). And yet, “the most effective data-collection strategy is one that uses multiple measures and multiple methods of data collection” (Lee & Templer, 2003: 208). Thomas et al. (2008: 136) also claimed that “any single approach to measurement of this complex construct is likely to be inadequate.”

The aim of this research was to help close this knowledge gap by comparing measures of two different components of CCC. More concretely, we empirically question whether personality determines CCK.

Figure 2: Scope of the study: components of cross-cultural competence we measured



Our survey does not include the component of behavioral skills (see Figure 1) because (1) accessible methods seem unsatisfying to us (unlike some existing measures, like CQ for example,

we did not want to rely on self-assessed measures and items such as “I adjust my behavior...”) and (2) satisfying measures (such as observing behavioral skills in real-life context and other-rating) were not feasible, given resources available for this study and limited access to the worldwide sample.

3. METHOD

We empirically tested the model in Figure 2 with a survey to question to what extent the several personality traits determine CCK. Details concerning our research process and method are given in this section.

3.1. A multicomponent approach of CCC

A drawback of many existing measurement tools of CCC is that they address only one component of the concept. We included two components of CCC in our study, personality traits and CCK. We aimed to test the link between them by connecting two measurement techniques: personality traits were measured with selected personality trait scales, and CCK was measured with the critical incident technique.

For most of the personality traits and attitudes included in our model, we used scales developed and tested by other authors. Sociability was measured with Hogan & Hogan’s (1992) revised “HPI” (Hogan personality inventory) scale (12 items). The “NEO-FFI” (revised neo five factor inventory) Costa & McCrae, 1992) was used to measure emotional stability, and the scale developed by Davis and Rubin (1983, 6 items) was used to assess the self-confidence. Empathy, the “tendency to adopt the psychological point of view of others,” was measured with Davis’ (1983) 7-item scale. Porter and Inks’ (2000) construct of attributional complexity includes six factors. We considered three of them as relevant for CCC and included the 15 related items in the survey: the tendency to give simple versus complex explanations of human behavior, metacognition (the tendency to think about the underlying processes involved in causal attributions; Fletcher et al., 1986), and motivation to understand human behavior. Tolerance of ambiguity was measured by McQuarrie and Mick’s tool (1992, 12 items). Therefore, 56 items measuring the personality traits linked to CCC were included in the survey.

We did not find published scales for open-mindedness and absence of ethnocentrism that would suit our purpose, as existing scales were not adaptable to the context of cross-cultural encounters

in international business. Mowen and Spears’ (1999) scale of openness to experience is linked to the domain of arts. In the context of CCC, open-mindedness refers to avoid considering a culturally determined behavior as “abnormal” on the simple ground that it differs from one’s home cultural norms. The well-known CETSCALE of consumer ethnocentrism (Consumer Ethnocentric Tendencies Scale, Shimp & Sharma, 1987) questions customers’ buying behavior. Moreover, the CETSCALE is home culture-specific and therefore not adapted to a culture-general measurement. From the existing scales, we kept the items that tapped open-mindedness and ethnocentrism in a CCC context. We also generated samples of new items for each concept through open discussions with experts in the field. These items were submitted to a pilot sample of 149 respondents. Principal component analyses yielded a four-item scale of open-mindedness ($\alpha = 0.93$) and a three-item scale of ethnocentrism ($\alpha = 0.83$). The list of items composing the final scales is provided in Appendix B.

To measure CCK, we followed guidelines provided in the literature. We constructed a “culture-general assimilator” (see above) with the help of a group of five researchers specialized in intercultural management, with high international experience and born and raised in four different countries. Five “critical incidents” were selected from handbooks in the field of intercultural management, student internship reports, and personal experience on the criteria of relevance and the variety of cultures concerned (see Table 1). Our aim was that respondents were “foreigners” to all or almost all cultures concerned by the critical incidents. A maximum of one critical incident could be related to a respondent’s home culture.

Table 1: Cultures concerned by the critical incidents used in the survey

Critical incident number	Main national culture concerned*	Secondary national culture concerned**
1	China	USA
2	Japan	Netherlands
3	Finland	France
4	Spain	Germany
5	Sweden	Brazil

* Knowledge on and cultural competence in this culture is essential to answer the critical incident correctly.

** Knowledge on and cultural competence in this culture is helpful but not essential to answer the critical incident correctly.

We tried to select critical incidents that were not too stereotyped, not “too easy to answer,” but theory based (see above; Bhawuk, 2001). One critical incident is given as an example in Appendix A.

For each critical incident, four possible interpretations of the situation were formulated. For most of the incidents, one answer was completely right (offering a very good interpretation of the situation) and at least one answer was completely wrong (offering a completely false interpretation of the situation). The two remaining answers were often “partly wrong.” The group of experts consensually agreed on a grade for each of the possible answers on a scale of 0 to 10. The respondents were first asked to choose the best explanation for each situation and then to grade all the explanations on a scale of 0 to 10. Consequently, three indices were calculated for each respondent:

- Index 1 was binominal: 1 for choosing the best answer, 0 for choosing another answer;
- Index 2 corresponded to the score (between 0 and 10) attributed by the team of experts to the answer chosen as best answer by the respondent; and
- Index 3 was a scale based on the sum of the deviances between the respondent’s grading and the experts’ grading ($\text{Index 3} = 120 - \text{sum of deviances}$ so that a high index indicates good knowledge, such as indices 1 and 2). This index is the most sophisticated one, as it considers the respondents’ interpretation of all the four answer possibilities, and not only how correct their first choice was.

The bilateral correlations between the three indices were highly significant (index 1 / index 2: 0.95**, index 2 / index 3: 0.63**, index 1 / index 3: 0.64**).

3.2.Data collection and sample

The web-based questionnaire was developed in English and translated by native speakers into three other languages: French, German, and Portuguese. Translations were double-checked by other translators fluent in both English and the second target language. Respondents could choose their preferred language on the first page of the questionnaire.

Our aim was to collect a large number of answers to the survey from people from various countries. We decided not to use a student sample, despite the convenience of this option, to have

respondents who are currently working, and with varied ages, levels of international experience, and professional responsibilities. The respondents were contacted through two networks:

- Social network of the authors: friends, colleagues, professional contacts, and their respective networks. In other words, we combined convenience sampling (our own social network, easy and not costly to access, high return rate of the survey) with snowball sampling (initial subjects generated additional subjects). Contacts who helped us to collect more answers did so mainly because they thought the survey was interesting, particularly the critical incidents.
- The survey was also posted on “InterNations” (www.internations.org). InterNations is “the first online community for people who live and work abroad” (according to their website) with invitation-based membership. The network’s language is English. We explained the purposes of our survey and invited people to complete it. About one-third of the answers were collected with this post.

In total, 506 answers were completed online, of which 443 were complete and valid. Respondents came from more than 27 different countries but mainly from France (90 respondents), the United States of America (77), Brazil (57), Germany (52), and China (40). Other countries of origin were Italy (15), the United Kingdom (14), Spain (13), India (9), Canada (6), Sweden (6), Switzerland (3), Australia, Austria, Denmark, Finland, Greece, Hungary, Poland, Portugal, Turkey (2 each), Czech Republic, Ireland, Japan, the Netherlands, Russia, Thailand (1 each), “other” (24), and no indication (13).

Of the total respondents, 55% were women, with an estimated average age of 35 years (age under 20: n=5, 20–29: n=194, 30–39: n=131, 40–49: n=58, 50–59: n=38, 60 and over: n=17; estimated standard deviation 12 years). In addition, 39.5% have already lived abroad, 40.5% have travelled abroad but never lived abroad for a period exceeding 3 months, and 20% have never travelled abroad; 42% sojourned in a country different from their home country at the time of data collection. About 88% of the respondents came from a country and/or were currently living in a country where one of the four languages of the questionnaire was the official/mostly spoken language. Only people speaking one of the four languages of the questionnaire were contacted, and their participation in the survey was completely voluntary. “InterNations” website’s language is English. For these reasons, we consider that all respondents could understand the questionnaire correctly.

3.3. Data analysis

There is an ongoing debate among scholars about the culture-general or culture-specific nature of CCC (Berry & Ward, 2006; Graf, 2004; Greenholtz, 2005; Hatzer & Layes, 2003). Graf (2004) found CCC to be culture general, while Hatzer and Layes (2003) and Berry and Ward (2006) hypothesized CCC to be culture specific. We tested each scale in four subsamples, the four national contexts where we had enough number of respondents and where people answered the survey in their native language (Brazil, France, Germany, USA). All scales showed the same structure and number of factors in the four subsamples. Consequently, we treated CCC as a culture-general concept. We did not adopt a comparative approach of cultures, but analyzed a sample of $n = 443$ people from (almost) all over the world. The measurement tool used was a culture-general one.

Besides the two scales issued from a pilot study (open-mindedness and ethnocentrism), the personality trait scales were adopted from the literature. We therefore deemed unnecessary to explore their factor structure. Thus, we started with a series of cross-validated confirmatory factor analyses with maximum-likelihood estimation of the parameters. The sample was randomly split in half. We tested the scales on one of the subsamples. We did some model trimming when necessary to eliminate the items that penalized the fit of the models. The resulting structures were then validated on the second subsample. In line with usual recommendations (e.g. Anderson & Gerbing, 1988), the five scales were subsequently tested as a first-order reflexive measurement model. Maximum-likelihood estimation assumes multivariate normal distribution of the manifest variables. This condition is rarely met in practice, and we therefore report in Table 2 the robust fit statistics (Satorra & Bentler, 1994) provided by EQS 6.1. (Bentler, 2006)¹.

We were interested in empirically assessing the predictive power of personality traits on the cognitive dimension of CCC, more than in testing and confirming a theory. Consequently, a partial least squares path modeling (PLS-PM) approach was preferred to covariance-based structural equation modelling (CB-SEM), as recommended in the literature (e.g. Hair, Ringle & Sarstedt, 2011), to test the relationships between these constructs (Figure 3). PLS-PM has a number of advantages over CB-SEM, one of them being to rely on less stringent assumptions regarding the data. Therefore, PLS-PM works efficiently with small sample sizes, short scales, and complex models (Hair, Ringle & Sarstedt, 2011). Using the same two subsamples, we tested

¹ At the exception of SRMR for which no robust alternative is available in EQS.

the structural model on both subsamples and performed a multigroup analysis to compare both structures. XLSTAT PLS-PM was used to perform this part of data analysis.

4. RESULTS

4.1.Confirmatory factor analyses

Table 2 reports the fit statistics for each of the scales and for the personality traits measurement model. At this stage, the tolerance for ambiguity scale was eliminated from further analyses because of its very weak loadings and communalities, which resulted in unacceptable fit statistics and impaired the quality of the final model. Table 3 reports the values of the loadings and of the scales’ reliability coefficients (Cronbach’s α and Jöreskog’s ρ). For the sake of clarity, we have reported only the final results, i.e. those obtained in the validation sample.

Table 2: Confirmatory factor analyses of the scales: global fit statistics

	χ^2 (ddl)	p	CFI	RMSEA	SRMR
Complex vs. simple explanations	0.048 (1)	0.825	1.000	0.000 (0.000; 0.107)	0.004
Metacognition	9.085 (5)	0.106	0.974	0.061 (0.039; 0.123)	0.036
Motivation to understand human behavior	1.113 (5)	0.953	1.000	0.000 (0.000; 0.000)	0.016
Emotional stability	2.789 (5)	0.733	1.000	0.000 (0.000; 0.067)	0.020
Ethnocentrism	1.433 (1)	0.231	0.997	0.044 (0.000; 0.191)	0.021
Open-mindedness	1.017 (2)	0.601	1.000	0.000 (0.000; 0.109)	0.016
Self-confidence	4.024 (2)	0.134	0.981	0.068 (0.000; 0,164)	0.029
Communication skills	1.495 (1)	0.221	0.994	0.047 (0.000; 0.192)	0.021
Empathy	1.860 (2)	0.395	1.000	0.000 (0.000 ; 0.130)	0.024

Table 3: Item loadings and reliability coefficients of the measurement scales

	Concept	Item	Loadings	α	ρ
Attributional complexity	Complex vs. simple explanations	Comp_2	0.686	0.644	0.656
		Comp_3	<u>0.463</u>		
		Comp_4	0.705		
	Metacognition	Comp_5	0.589	0.760	0.762
		Comp_6	0.630		
		Comp_7	0.742		
		Comp_8	0.616		
		Comp_9	0.538		
	Motivation to understand human behavior	Comp_11	<u>0.470</u>	0.629	0.629
		Comp_12	<u>0.412</u>		
		Comp_13	0.601		
		Comp_14	0.631		
		Comp_15	<u>0.422</u>		
	Emotional stability	EmoStab_1	0.731	0.777	0.783
		EmoStab_2	0.745		
		EmoStab_3	<u>0.449</u>		
		EmoStab_4	0.656		
		EmoStab_5	0.625		
	Ethnocentrism	Ethno_1	0.823	0.569	0.660
		Ethno_2	0.811		
		Ethno_3	<u>0.156</u>		
	Open-mindedness	OpnMnd_1	0.789	0.630	0.647
		OpnMnd_2	0.779		
		OpnMnd_3	<u>0.237</u>		
		OpnMnd_4	0.625		
	Self-confidence	SelfConf_1	0.743	0.703	0.720
		SelfConf_4	0.664		
		SelfConf_5	0.596		
		SelfConf_6	<u>0.450</u>		
	Communication skills (sociability)	Sociab_1	<u>0.466</u>		

	Sociab_3	0.744	0.686	0.696
	Sociab_5	0.772		
Empathy	Empath_1	0.652		
	Empath_2	0.863	0.777	0.779
	Empath_3	0.664		
	Empath_6	0.594		
Cross-cultural knowledge	Nbbrscen	0.991		
	Sumntsce	0.955	0.619	0.749
	Sumscosc	0.636		

Among the six subscales, simple versus complex explanations, metacognition, and motivation to understand human behavior are the three that measure attributional complexity (Porter & Inks, 2000). Conceptualized as a general personality trait, attributional complexity is hypothesized to influence a wide array of attributional constructs that are, as a consequence, “all related in a consistent fashion” (Fletcher et al. 1986: 877). Although this would suggest modeling attributional complexity as a second-order reflexive construct, we chose to keep the three subscales mentioned above as separate first-order latent variables to assess the specific influence of each of them on the cognitive dimension of CCC/CCK. At a more empirical level, this raises no problem as far as the correlations between these three constructs remain moderate and thus cannot be suspected to generate multicollinearity in the model. Table 2 shows that the fit statistics for our scales are consistent with that commonly advocated in the literature (Hu & Bentler, 1998). Similarly, Table 3 shows the acceptable values of the reliability coefficients as far as the Jöreskog’s rhos are all above 0.6.

All scales showed good fit statistics and fair to good reliability. On the contrary, AVE was poor, with the exception of that of CCK. We assume that it is mainly because of a number of items showing low loadings (underlined in Table 3). We kept these items at this stage of the analyses and tackled the issue during the final stage of the modeling. The resulting final AVEs are reported in Appendix C. To avoid excessive purification at the expense of the scales’ content validity, we kept these items for the confirmatory factor analyses and discarded them during the final stage of the modeling, which is detailed subsequently. This resulted in notable improvement of the final AVEs, which are reported in Appendix C.

4.2. Testing the structural model

We hypothesized that CCC includes both personality traits and CCK and that CCK is determined by personality traits. In this way, our model (Figure 3) could have been designed as a type II model, according to the terminology of Jarvis, Mackenzie, and Podsakoff (2003). That is, a reflexive first-order structure and a formative second-order structure. However, such a structure was not identified in our model. Adding reflective indicators to the second-order latent variable is one of the ways to solve this issue (Diamantopoulos, 2008). We have used the abovementioned culture assimilator (critical incident technique) as an operational measure of CCK. As all personality traits are conceptualized as direct antecedents of CCK, no indirect relations were hypothesized.

To test the predictive power of the seven personality traits retained in this research on CCK, a three-step procedure was followed. First, we randomly split our sample in half. Second, we selected one of the two subsamples to test the model and carried out some “model trimming” (Kline, 2011) to come up with an acceptable solution. As several indicators were still raising issues, this proved useful. Third, we conducted a multigroup analysis to compare the path coefficients on both samples. Our hypothesis was that there was no difference between both samples, thus yielding evidence of the model’s ecological validity.

The 39 items reported in Table 3 were used in the first analysis. Motivation to understand human behavior and communication skills showed a weak AVE of 0.376 and 0.334, respectively.

Consistent with the values in Table 3, the three same indicators (Comp_11, Comp_12, and Comp_15) of “motivation to understand human behavior” showed weak loadings. As their cross-loadings did not suggest that these indicators could be related to other concepts in the model, they were removed from subsequent analyses. For the same reason, the first item of “communication skills” (Sociab_1) and the third item of “open-mindedness” (OpnMnd_3) were also discarded.

Given the limited number of items for each scale, this late purification partially questions the content validity of the scales and calls for research aimed at improving these measures. A second test of the model was then conducted on the 34 remaining indicators. It was proved to be satisfactory, with a bootstrapped absolute goodness of fit (GoF) of 0.382 and no AVE lower than the cutoff value 0.5. GoF is defined as the geometric mean of the average communality and average R^2 of the endogenous constructs. It is an “operational solution (...) meant as an index for

validating the PLS model globally” (Tenenhaus, Esposito Vinzi, Chatelin & Lauro, 2005: 173). Wetzels, Odekerken-Schröder, and Van Oppen (2009: 187) suggested that GoF values can be compared to effect sizes of R^2 and, assuming a minimum AVE of 0.5, concluded that a GoF of 0.36 may be considered as a baseline value for globally validating a PLS model. As our model meets these two criteria ($GoF > 0.36$ and no $AVE < 0.5$), we consider it to be valid.

Performing a multigroup analysis in PLS-PM relies on a distribution-free data permutation test (Chin & Dibbern, 2010). The differences between the parameters of both groups are compared to differences between groups that are randomly assembled from the data. The process involves estimating the model and calculating the test statistic for the parameter estimate difference through an iterative approach that generates an empirical distribution of test statistics. The significance of the test statistic for the a priori groups is then evaluated against this distribution of test statistics (Rigdon, Ringle & Sarstedt, 2010: 267). Table 4 reports the results of the multigroup analysis performed on our data. The last column shows that the relationships do not differ significantly between the test and the validation models. From this, it may be assumed that the model is stable across replications, which indicates good ecological validity.

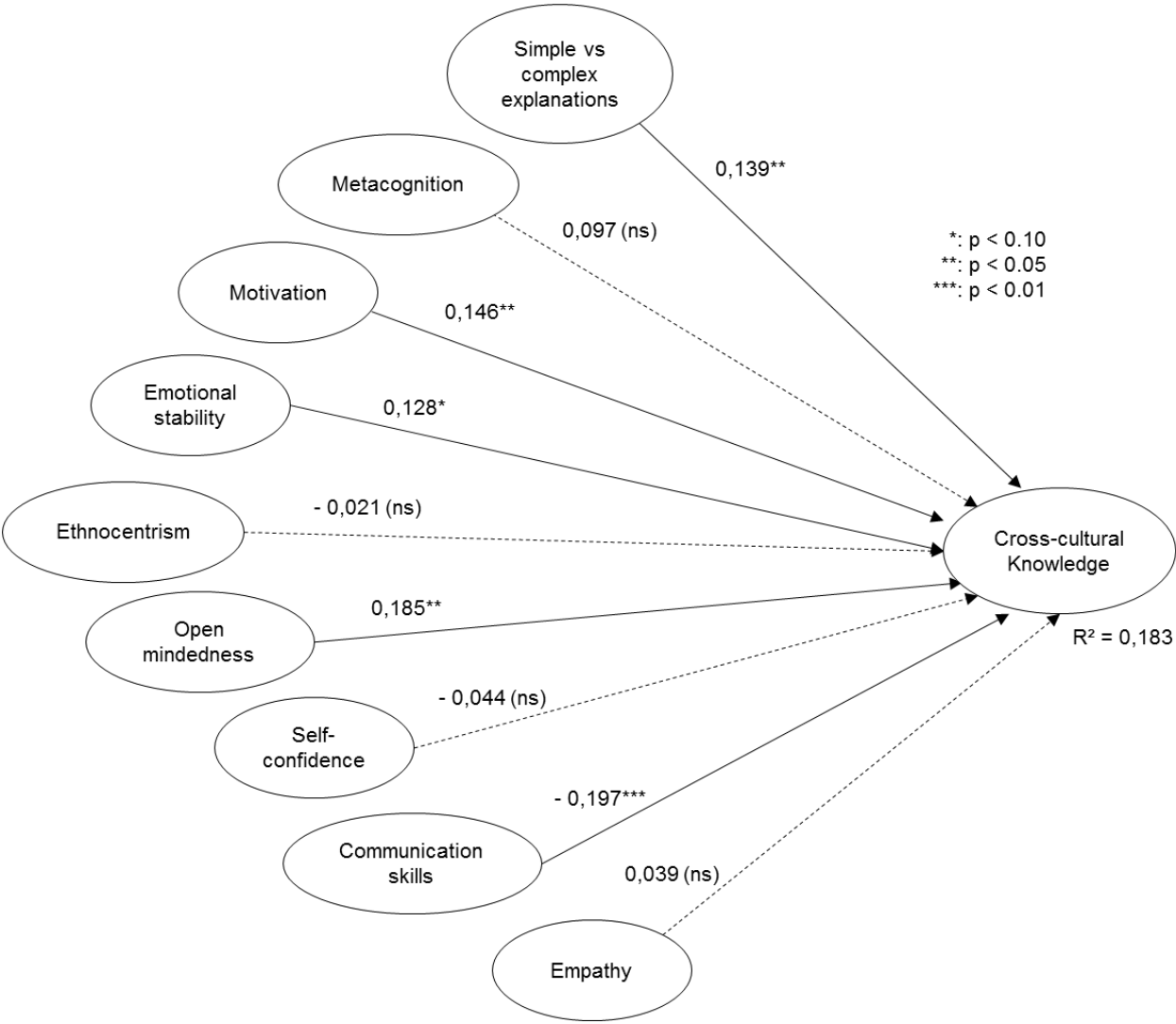
Table 4: Stability of structural relationships between personality traits and cross-cultural knowledge across replications of the model

Construct	Difference	<i>p</i>
Simple vs. complex explanations -> Cross-cultural knowledge	0.048	0.584
Metacognition -> Cross-cultural knowledge	0.065	0.525
Motivation -> Cross-cultural knowledge	0.049	0.644
Emotional stability -> Cross-cultural knowledge	0.090	0.327
Ethnocentrism -> Cross-cultural knowledge	0.148	0.248
Open-mindedness -> Cross-cultural knowledge	0.220	0.059
Self-confidence -> Cross-cultural knowledge	0.088	0.594
Communication skills -> Cross-cultural knowledge	0.196	0.099
Empathy -> Cross-cultural knowledge	0.077	0.535

Figure 3 provides the values of the parameters in both samples. As the differences were not significant, we focus on the values of only one group. The parameter values followed by (ns)

indicate that the relationships were not significant. This was the case for metacognition, ethnocentrism, self-confidence, and empathy. The significance of the other relationships has to be interpreted in accordance with the number of stars following the parameter value (see legend). These results are discussed in the following section.

Figure 3: Influence of personality traits on CCK



The discriminant validity of the model was assessed, and the results are provided in Appendix C. The lower left triangle reports the correlations between the latent variables (i.e., the constructs). None of them are sufficiently high to question the existence of a single dimension for any two pairs of concepts. The upper-right triangle reports the squares of these correlations. They are to be compared to the ρ_{vc} coefficients (average variance extracted) reported in the last column of the table. Discriminant validity of the constructs is established if their AVE is higher than any of the squared correlations between the constructs. This condition was followed in our data analysis.

5. DISCUSSION

Four out of the nine structural relationships between personality traits and CCK were not significant. A fifth one was significant only at $p < 0.10$. Besides, the values of the coefficients were low. This resulted in a low R^2 . Only 18.3% of CCK was accounted for by personality. In other words, about 82% of the understanding of cross-cultural situations was because of factors that probably are of a nature other than personality. This means that personality at large has very little direct effect on specific knowledge and cognitive abilities, which helps people adapt to the difficulties in intercultural interactions.

Let us remember that CCC has been defined as an individual's effectiveness in interacting successfully with people from different cultural backgrounds. Measurement of CCC is often reduced to personality traits while CCK appears closer to the operational manifestation of CCC. Our study shows that these two dimensions are only very weakly linked to one another. These results call for a reflection on the conceptualization and the measurement of CCC.

5.1. Implications for the conceptualization of CCC

Our results contradict those from most of the literature on CCC, where CCK and adjustment are determined by personality traits (Johnson et al., 2006; Leiba O'Sullivan, 1999; Ruben, 1989). The results of the present study confirm that the different components of CCC such as attitudes, personality traits, cognitive abilities, skills, and behavior are not equivalent to one another (Ruben, 1989). One component (personality traits) does not even clearly determine another one (culture-general knowledge). Many authors called for more empirical research in this area (Johnson et al., 2006; Van de Vijver & Leung, 2009) to consolidate conceptualizations of CCC. Our results contribute more in the questions they raise than in the clear conclusions they deliver. They cast a certain degree of doubt on some "truths" frequently mentioned in the literature, which should incite scholars to be very careful when mentioning personality traits as predictive of CCK or of CCC as a whole.

Still, it is possible that other results would have been obtained if other personality traits had been measured or if other scales had been used to measure the abovementioned traits. Some of the scales need further improvement. After data analysis, the scales for open-mindedness and communication skills remained with a small number of items, which questions content validity.

The tolerance for ambiguity scale had to be eliminated from the analyses because of its very weak quality; this trait should be measured in further studies with a different and improved scale. Moreover, the (convenience) composition of the sample might have influenced the results: it seems likely that a considerable part of the respondents participated in the survey because they were interested in the subject of intercultural encounters. The sample was probably more than the average population motivated to understand cultural differences. This could be in line with the result that motivation to understand human behavior is one of the traits that influences CCC most. Spitzberg and Changnon (2009) mentioned dozens of personality traits that are said to be associated to CCC. We tried to measure the most frequently mentioned traits, but further research could add others to test their effect on CCK: tolerance for ambiguity, for instance, that was excluded from this study should be included in future research.

5.2. Traits enhancing CCC

Our results highlight the important role of motivation to understand others for an accurate understanding of foreign cultures: among the traits that best explain CCK in our study comes “motivation to understand human behavior” (path coefficient = 0.146). This result is consistent with the theory of individual learning, which conceptualizes learning as a result of experience enhanced by motivation (Kolb, 1984). It is possible that individuals with higher motivation to understand human behavior benefit more from their cross-cultural experience and consequently develop a better understanding of other cultures. In other words, motivation is essential for learning, perhaps especially in the intercultural domain. This result contributes to the conceptualization of CQ as far as it supports the “classical” CQS scale (used by Ang et al., 2007, for instance) including motivation through motivational intelligence, rather than the Thomas and colleagues’ (2008) model that excludes motivation from the domain of CQ.

Another facet of attributional complexity “simple versus complex explanations,” is also significantly related to CCK. This implies that people who tend to feel at ease with complex explanations with regard to other’s behavior also tend to show a higher competence when it comes to managing intercultural interactions. It may be derived from this that in intercultural environments, those who possess the capability to collect complex information and categorize it in a more efficient way tend to better handle complex managerial situations in teams involving people from different cultures.

It can further be noted that the relationship between “metacognition” and CCK is not significant. This construct is linked to the tendency to think about the underlying processes involved in causal attributions (Fletcher et al. 1986). In the domain of cross-cultural interaction, we can think of this as similar to constantly trying to analyze environmental cues (e.g. the nonverbal behavior of foreigners) and assign meaning to them and then attempting to develop appropriate answers. Although intuitively appealing, and frequently quoted in the literature, this does not seem to influence CCK. This result also gives some significance to the choice we made not to model attributional complexity as a second-order construct including the three aspects, “motivation to understand human behavior,” “simple versus complex behavior,” and “metacognition.” Doing this would have meant that we had implicitly hypothesized that the relationships between the three aspects and CCK would be significant. Despite the assumption that attributional constructs are “all related in a consistent fashion” (Fletcher et al. 1986: 877) and some empirical evidence showing the links between these constructs in a selling context (Porter & Inks, 2000), our results tend to suggest that their six-dimensional conception of attributional complexity (described in section 3.1.) cannot be generalized, even though we have used only three of the six dimensions. Open-mindedness is also positively related to CCK though, again, in a very moderate way. This is consistent with a wide body of literature that includes this trait among those supposedly contributing to CCC (e.g. Black, 1990; Cui & Van den Berg, 1991; Dirks, 1995; Johnson et al., 2006; Spitzberg & Changnon, 2009; Van der Zee & Van Oudenhoven, 2001).

Finally, CCK is also significantly but negatively determined by “communication skills” in our study. We consider that this does not mean that the poorer a person’s communication skills, the more he/she knows about varied cultural settings. It rather shows that the more confident respondents are in their ability to understand quickly and easily, the less they question cultural differences in communication styles. This is reflected by their lower ability to interpret the critical incidents. Self-confidence has no significant impact on CCK, but the negative impact of communication skills shows that individuals who have high confidence in their communication skills do not easily develop an adequate interpretation of foreign cultures. In other words, we interpret self-confidence as an antecedent of (this measure of) communication skills here. This contradicts with the finding of Osman-Gani and Rockstuhl (2006) who showed that cross-cultural training increases self-efficacy, which in turn increases cross-cultural adjustment. However, their study focused on cross-cultural training and individuals who have been sensitized to cultural

differences, whereas the present study also includes people with very little international experience (20% of the sample have not even travelled abroad once in their lifetime). Another study result that contradicts with ours is that from MacNab and Worthley (2012) where self-efficacy strongly predicts the development of CQ capabilities. We consider that their results reflect the limitations of the CQS because they are self-evaluated: not surprisingly, respondents with more self-efficacy are also more confident in their CCC. Our results support the call for measures of CCC that are not self-evaluated.

5.3. Implications for the measurement of CCC

Research on CCC and its contingencies suffers from a lack of confrontation with empirical data. Scholars could assess CCC by using personality trait scales like the ones we have published in this paper. However, this research strategy is highly questionable because possessing personality traits that are said to be part of CCC is no guarantee for understanding cross-cultural situations or developing appropriate behavior in a foreign culture. Consistent with the finding of Graf and Harland (2005), we found that different measures of CCC do not necessarily lead to convergent results. Therefore, researchers should clearly determine which components of CCC their research question addresses. For instance, in a study aiming to determine whether team leaders with high CCC reach a higher performance with their intercultural team, measuring the team leader's cultural flexibility, his/her understanding of the team members' national cultures, or the degree he/she adapts his/her behavior to the different cultural codes of the team members are not equivalent approaches. Culture assimilators, containing several critical incidents, appear to be a solid tool for measuring CCK. This long-known technique is not frequently used by scholars assessing CCC, but we encourage them to do so because this tool captures explicit and implicit CCK. The disadvantages of this technique are the increased time and expertise needed to choose the critical incidents and define and evaluate the possible explanations and the increased time required by the respondents to complete the questionnaire. Trait scales are often considered more "comfortable" to use, but as we have shown, this comfort seems to be detrimental to accurateness of the measure.

Scholars examining contingencies of CCC need to carefully evaluate which aspect of CCC is being considered (traits, knowledge, behavior, etc.) and select an appropriate measure for these aspects. Researchers should not substitute one aspect of CCC for another.

In line with Graf's (2004) findings and the exploratory factor analysis of our data country by country, we considered CCC to be culture-general rather than culture-specific. Given the small subsamples for each country, we did not investigate in detail the question whether the same or different personality traits determine CCC in different cultural areas. Nevertheless, as suggested by Hatzer and Layes (2003) and Berry and Ward (2006), an avenue for future research is to question whether some traits are relevant for CCC in some cultural contexts and others in other countries and cultures.

6. CONCLUSION

The purpose of this paper was to question to what extent the personality traits considered as associated to CCC really determine another component of CCC, i.e. CCK. The aim was to reach a refined conceptualization of CCC and help constructing a multidimensional measure. We tried to define a culture-general measurement tool of CCC that could be used worldwide, with individuals from various contexts and international backgrounds ("pure locals" without any international experience from various countries and "multicultural people" with a highly intercultural background), and that is not solely based on self-assessment.

Several scales of personality traits linked to CCC were validated. The items composing the scales are listed, for further use by researchers. A statistically valid structural model that shows the extent to which personality determines CCK was set up. Surprisingly, and in contrast to most of the literature, only 18% of CCK was explained by personality in our results. Four out of the nine hypothesized relationships between personality traits and CCK ended up being nonsignificant. Indeed, "motivation to understand human behavior," "complex versus simple explanations," "open-mindedness," and "emotional stability" positively influenced CCK, but in a very moderate way. In contrast to the literature, communication skills are negatively linked to CCK, but this seems to be because of the overevaluation of individuals' cross-cultural communication skills with low international knowledge and experience. Common conceptualization of CCC should therefore be handled carefully. Our results highlight that despite abundant publications, research on CCC is still in an infant stage. The nature of CCC is highly complex, and there is a need for more research to understand the concept and substantially improve its measurement. Thus far, it could not be concluded that the personality traits that are commonly quoted as being associated to CCC really determine a better understanding of cross-cultural situations. Extending these results,

this research also questions the possibility to accurately capture CCC by using quantitative methods. CCC is a complex concept and phenomenon, and scholars (including the authors) visibly have not succeeded thus far in developing quantitative measurement tools that can properly reflect this complexity.

6.1. Managerial relevance

This paper mainly contributes to the conceptualization and measurement of CCC. Nevertheless, some practical insights can be drawn from our research. Managers in international environments who intend to evaluate individual CCC in contexts such as recruitment or selection of a foreign assignee, a leader of a global team or a head of international marketing department, should not rely on just “one-fits-all” evaluation tool. They should carefully consider which aspect(s) of CCC is/are needed. A foreign assignee should mainly need to know the culture of his/her host country, while the leader of a global team composed of people from various countries and cultures should more importantly show empathy and motivation to understand human behavior. Our study shows that the several dimensions of CCC do not often come together as a package. Therefore, a choice should be made in the aspect(s) that is/are to be assessed.

For instance, to evaluate CCC of future international managers who will interact with people from various countries and cultures, both tools presented and used in this study might be helpful: personality traits and a culture assimilator, including critical incidents from varied contexts. Managers can use our or similar scales and therefore easily assess personality traits linked to CCC. This paper offers a theoretically founded and empirically validated measurement tool, with the complete list of items. Although the use of such a survey alone appears to be insufficient to assess somebody’s ability to understand business situations in foreign cultures, it should however be completed by the critical incident technique contained in a culture-general culture assimilator. An example of a critical incident is included in our paper, and many others can be found in the relevant literature. To evaluate CCC of future foreign assignees who will work for a period of time in a particular foreign country and with people from one particular culture, the measurement of personality traits does not appear to be really useful. A culture-specific culture assimilator, precisely fitting the context, could deliver much more accurate results.

Overall, this study shows that practitioners do not absolutely need “all this science” to evaluate CCC of candidates or collaborators. Qualitative (and may be even intuitive) evaluation can possibly yield satisfying results, especially when the evaluator him- or herself possesses CCC.

6.2.Limitations

The main limitations of this study lie in methodological choices of the survey. We used convenience sampling for collecting the data. Therefore, the size of the subsamples per country varied, and there were small differences in the characteristics between samples (e.g. the US-subsample was younger than the overall sample; everybody in the Chinese subsample spoke at least one foreign language, namely English). As we intended to survey people worldwide, not all the respondents could answer the survey in their mother tongue. Moreover, it would have been helpful to gather more information through control variables in the questionnaire, concerning educational background or the way people had been contacted or had knew about the survey. The implications of these limitations, and delimitations, have been discussed in the method, results, and discussion sections.

It may also be kept in mind that the recombination of the established personality traits’ measures with newly added ones, although validated in the literature or through our own pretest, could influence or even impair the validity of the overall data collection procedure. As mentioned above, this calls for research aimed at improving the measurement scales for the various personality traits used in our modeling of CCC.

6.3.Avenues for future research

We believe that future research on CCC should continue to confront the concept with empirical data, combining varied methods. These studies remain rare, but are needed to gain deeper understanding of what CCC really is.

Future studies should also add behavioral components (adaptive skills) and outcomes of CCC (internal outcomes such as well-being in intercultural or foreign settings and external outcomes such as performance in cross-cultural negotiation or team leadership) to the model tested here. It would also be interesting to combine self-assessed measures with evaluation by peers, negotiation partners or supervisors, or with more objective performance measures in cross-cultural settings. An important question on which an extensive research remains to be done is the culture-general vs. culture-specific nature of CCC. Is CCC the same worldwide, or does it take different forms,

or is it determined by different factors according to culture? Representative samples or at least very similar samples (in terms of age, international experience, and educational background) could be surveyed in some countries for comparison.

More largely, the debate on CCC in the field of international management is only useful if CCC is put into perspective. Scholars should build on existing measures of CCC to question its contingencies. What are the causes, co-occurrences, and consequences of CCC? Insights gained thus far on this question are far from satisfying for scholars and practitioners.

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Appendix A: Example of a critical incident (Critical incident number 2)

Situation:

A Dutch businessman travels to Tokyo to meet his Japanese business partners. After the meeting, he is invited to join them for a few drinks at a karaoke bar. Later that night, after everybody has consumed a considerable amount of alcohol, the Dutchman starts to express his annoyance. He complains about how the project is dragging on and how poorly organized his Japanese colleagues are. He also accuses the project leader for being too lenient with his subordinates in front of the group. During the conversation, he becomes increasingly aggressive and louder. What is going to happen?

Possible answers and “ideal” answer scale (from 0 = completely wrong, to 10 = completely right)

His behavior is acceptable. Nobody will talk about that next day.	10
Karaoke has to be perfect. Disharmony is not accepted. The aggressive behavior of the Dutch guest is not acceptable.	6
In Japan, no emotions should be shown. The Dutch employee’s behavior seriously offends his Japanese hosts.	6
The Dutch businessman is likely to face consequences. His aggressive behavior will be communicated to his superior at the next day. The collaboration with the Dutch businessman is terminated immediately.	1

Appendix B: Measures of the constructs

Construct	Item
Complex vs. simple explanations	I have found that the causes for people’s behavior are usually complex rather than simple. (Reverse coding)
	I usually find that complicated explanations for people’s behavior are confusing rather than helpful.
	I prefer simple rather than complex explanations for people’s behavior.
Metacognition	I am very interested in how my own thinking works when I make judgments about people or attach causes to their behavior.
	I really enjoy analyzing the reasons or causes for people’s behavior.
	I have thought a lot about the way that different parts of my personality influence other parts.
	I think a lot about the influence that society has on other people.
	When the reasons I give for my own behavior are different from someone else’s, this often makes me think about the thinking processes that lead to my explanations.
Motivation to understand human behavior	I am not really curious about human behavior.
	I tend to take people’s behavior at face value and not worry about the inner causes for their behavior (e.g. attitudes, beliefs, etc.)
Emotional (in)stability	I am moody more than others.
	I am a temperamental person.
	I often have envious feelings.
	My emotions go way up and down.
	I am testy more than others.
Ethnocentrism	In my country, we have reached a level of “moral” development that other countries ought to reach as well.
	The dominant values in my country are good and should be favored to develop elsewhere.
	I prefer to be with people who are like me.
Open-mindedness	I am tolerant toward people whose opinions are different from mine.
	I like talking with people whose opinions are different from mine.
	I think that I am an open-minded person.

Self-confidence	I think I have more self-confidence than most people.
	I am more independent than most people.
	I think I have a lot of personal ability.
	I like to be considered a leader.
Communication skills (sociability)	In general, when I meet new people, they quickly appreciate me.
	I can easily express my thoughts and feelings.
Empathy	I believe that there are two sides to every question and try to look at both.
	I try to look at everybody's side of a disagreement before I make a decision.
	When I am upset at someone, I usually try to "put myself in his or her shoes" for a while.
	I sometimes try to understand my friends better by imagining how this looks from their perspective.

Appendix C: Correlations between first-order latent constructs and discriminant validity (squared correlations be

	Simple vs. complex explanations	Meta cognition	Motivation	Emotional stability	Ethno centristm	Open-mindedness
Simple vs. complex explanations	1	0.024	0.099	0.010	0.050	0.007
Metacognition	0.153	1	0.144	0.001	0.004	0.093
Motivation	0.314	0.379	1	0.007	0.036	0.028
Emotional stability	-0.102	-0.033	0.086	1	0.002	0.041
Ethnocentrism	-0.223	-0.059	-0.191	0.042	1	0.011
Open-mindedness	-0.081	0.304	0.166	0.204	0.106	1
Self-confidence	-0.172	0.106	-0.067	0.019	0.124	0.225
Communication skills	-0.108	0.165	-0.066	0.229	0.158	0.280
Empathy	-0.066	0.529	0.221	0.196	-0.015	0.513
Cross-cultural competence	0.202	0.211	0.296	0.122	-0.098	0.206