

## DEVELOPMENT OF A CROSS-CULTURAL COMPETENCY SCALE BASED ON THE EXPERIENTIAL MODEL OF CROSS-CULTURAL LEARNING SKILLS

**Yoshitaka Yamazaki, & Michiko Toyama**

*Department of Business Administration, Bunkyo University (Japan)*

### Abstract

The aim of this study was to develop a cross-cultural competency scale based on perspectives from the experiential model of cross-cultural learning skills for successful adaptation of international assignees. The study involved 134 participants from 41 countries who studied at a graduate school in Japan, specializing in international relations and international management. Maximum likelihood exploratory factor analysis was conducted with varimax rotation, extracting three latent components of cross-cultural competency: building relationships, translation of complex information, and conflict management. To validate those components, confirmatory factor analysis was conducted with the same group of participants. Results showed acceptable levels of model fit, and the reliability of the three components ranged from 0.83 to 0.87. Accordingly, the cross-cultural competency scale developed in this study seems to be an effective measurement model to analyze cross-cultural competencies.

**Keywords:** *Cross-cultural competencies, scale development, experiential model, international graduate students.*

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### 1. Introduction

Numerous cross-cultural competencies for effective performance and adaptation to culturally diverse working situations have been identified and discussed over the past few decades (Bird, Mendenhall, Stevens, & Oddou, 2010; Leiba-O'Sullivan, 1999). In the field of international management as well as cross-cultural psychology, these competencies have been theoretically integrated into several key domains (Bird et al., 2010; Johnson, Lenartowicz, & Apud, 2006; Lloyd & Härtel, 2010; Matveer & Merz, 2014; Yamazaki & Kayes, 2004). Such integration helps both scholars and practitioners capture an overall picture of cross-cultural competencies. Among cross-cultural competency classifications, the work of Yamazaki and Kayes (2004; Kayes, Kayes, & Yamazaki, 2005), which was conceptualized using experiential learning theory (Kolb, 1984; Kolb & Kolb, 2017), highlighted successful expatriate adaptation to cross-cultural situations and proposed the experiential model of cross-cultural learning skills. However, a scale for the cross-cultural competencies described in the model was not provided. This study thereby aimed to develop a cross-cultural competency scale based on that work.

### 2. Literature review

In this study, the term cross-cultural competency is considered the same as intercultural competency because the terms are used interchangeably in the literature (Draghici, 2014). Cross-cultural competence is defined as an "individual's effectiveness in drawing upon a set of knowledge, skills, and personal attributes in order to work successfully with people from different national cultural backgrounds at home or abroad" (Johnson et al., 2006, p. 530). Classifications of a myriad of cross-cultural competencies typically consisted of a few dimensions with several competencies each. For example, based on differences between stable and dynamic competencies, Leiba-O'Sullivan (1999) proposed three competency dimensions—self-maintenance, cross-cultural relationships, and perceptual dimensions—with a total of 13 cross-cultural competencies (e.g., cultural knowledge, conflict-resolution skills, and stress-management skills). Bird et al. (2010) presented three dimensions similar to those of Leiba-O'Sullivan (1999), but each dimension had a different number and type of competency: the first dimension of perception management had four competencies (e.g., inquisitiveness, tolerance of ambiguity, and cosmopolitanism); the second dimension of relationship management had five competencies (e.g., relationship interest, interpersonal engagement, and emotional sensitivity); and the

third dimension of self-management had seven competencies (e.g., optimism, self-confidence, and self-identity).

This study focused on the experiential model of cross-cultural learning skills described by Yamazaki and Kayes (2004; Kayes et al., 2005) that did not propose measures. Thus, the study attempted to fill this gap by developing a scale of cross-cultural competencies. The classification in the experiential model relied on an extensive literature review of approximately 100 empirical studies to search for competencies important for effective cross-cultural learning in expatriates (Kayes et al., 2005). The model has four dimensions with seven competencies (Yamazaki & Kayes, 2004; Kayes et al., 2005). First, the interpersonal dimension includes the two competencies of building relationships within another culture (BR) and valuing people of different cultures (VP). The former competency refers to the ability to build, develop, and maintain good, trustful, and cooperative relationships with those of different cultures, while the latter refers to the ability to respect different cultures and understand values and behaviors in relation to them. Second, the information dimension includes the two competencies of listening and observation (LO) and coping with ambiguity (CA). The LO competency requires individuals to patiently listen to and observe people of different cultures. The CA competency calls for tolerating unfamiliar behaviors and uncertain situations in different cultures and coping with the ambiguity resulting from unfamiliar actions or nonverbal behaviors based on cultural differences. Third, the analytical dimension has one competency, translation of complex information (TCI), which involves communicating with people of different cultures by applying simple language to describe complex information and translating complicated ideas into plain words. The final dimension is action, which consists of two competencies: taking action and initiative (TAI) and managing others as conflict management (CM). The former competency refers to an action orientation—taking initiative and making risk-taking decisions in cross-cultural situations. The latter competency relates to interaction skills between host people and expatriates as a managerial activity. More specifically, it involves conflict management, serving to resolve conflicts between peoples of different cultures to establish a good relationship between them (Kayes et al., 2005). It is noted that this study thereby applied a simple and clear term, conflict management (CM) as the last competency from now on.

### 3. Methods

Since this study was intended to develop a cross-cultural competency scale as described in the introduction, we selected an international-focused graduate school in Japan as a research site relevant to international and cross-cultural activities. Over 90% of graduate students were from non-Japanese countries around the world, and classes were conducted in English, whereas students often encountered Japanese culture outside of the school. A total of 134 students participated in this study: 70 graduates specializing in international relations and 64 focused on international management. They came from 41 countries; Japanese students comprised only 3.7% of the study group. Their average age was 30.87 years ( $SD = 4.32$ ), and most had work experience before beginning graduate school. Of the student participants, 75 (56%) were men and 59 (44%) were women. They had at least one overseas experience including their current graduate program in Japan, and their average number of overseas experiences was 6.41 ( $SD = 6.81$ ). To develop the cross-cultural competency scale, the authors created 41 question items based on the experiential model with seven cross-cultural competency classifications. An example of BR is “Develop trustful relationships with people”; that of VP, “Respect different cultures and values”; that of LO, “Patiently listen to people, even if they cannot speak fluently”; that of CA, “Tolerate the unfamiliar behaviors of people”; that of TCI, “Communicate with people using simple language even if the information is complex”; that of TAI, “Become an action-oriented person if necessary”; and that of CM, “Resolve conflicts among people”. The 41 items applied a 7-point Likert-type scale.

### 4. Results

#### 4.1. Exploratory factor analysis

For exploratory factor analysis (EFA), maximum likelihood factor analysis was conducted with varimax rotation to extract latent factors from 41 items based on the cross-cultural learning model. The sample for the EFA was 134 graduate students, as described in the previous section. To identify key factors of EFA, we applied the guideline of an eigenvalue  $>1$  with scree plot investigation. To evaluate whether an item was kept or eliminated, we relied on three criteria: (a) a factor loading  $>0.5$  as a cutoff value (Maskey, Fei, & Nguyen, 2018), with that loading applicable for a sample size between 100 and 200 (Field, 2013); (b) the elimination of cross-loading items  $>0.4$  (Maskey et al., 2018); and (c) at least three items with  $>0.5$  per factor to account for the total variance (Costello & Osborne, 2005; Thompson, 2004).

*Table 1. Results of first exploratory factor analysis with 134 participants.*

| Competency Items    | Factor |      |      |      |      |      |      |       | h <sup>2</sup> |
|---------------------|--------|------|------|------|------|------|------|-------|----------------|
|                     | 1      | 2    | 3    | 4    | 5    | 6    | 7    | 8     |                |
| BR1                 | 0.64   |      |      |      |      |      |      |       | 0.72           |
| BR2                 | 0.77   |      |      |      |      |      |      |       | 0.78           |
| BR3                 | 0.83   |      |      |      |      |      |      |       | 0.8            |
| BR4                 | 0.43   |      |      |      |      |      |      |       | 0.78           |
| BR5                 |        |      |      |      |      |      |      |       | 0.62           |
| BR6                 | 0.61   |      |      |      |      |      |      |       | 0.74           |
| VP1                 |        |      |      |      |      |      |      |       | 0.64           |
| VP2                 | 0.49   |      |      |      |      |      |      |       | 0.73           |
| VP3                 |        |      |      |      |      |      |      |       | 0.62           |
| VP4                 |        |      |      |      |      |      |      |       | 0.57           |
| VP5                 |        |      |      |      |      |      | 0.79 |       | 0.79           |
| VP6                 | 0.44   |      | 0.47 |      |      |      |      |       | 0.69           |
| LO1                 |        |      | 0.58 |      |      |      |      |       | 0.62           |
| LO2                 |        |      |      |      |      |      |      |       | 0.63           |
| LO3                 | 0.41   |      | 0.5  |      |      |      |      |       | 0.75           |
| LO4                 |        |      | 0.47 |      |      |      |      |       | 0.48           |
| LO5                 |        |      |      |      |      |      |      |       | 0.46           |
| LO6                 |        |      |      |      |      |      | 0.4  |       | 0.66           |
| CA1                 |        |      | 0.52 |      |      |      |      |       | 0.67           |
| CA2                 |        | 0.45 | 0.48 |      |      |      |      |       | 0.72           |
| CA3                 |        | 0.42 |      |      | 0.43 |      |      |       | 0.68           |
| CA4                 |        |      | 0.49 |      |      |      |      |       | 0.6            |
| CA5                 |        |      |      |      |      |      | 0.45 |       | 0.58           |
| TCI1                |        |      |      |      | 0.61 |      |      |       | 0.62           |
| TCI2                |        |      |      |      | 0.55 |      |      |       | 0.77           |
| TCI3                |        |      |      |      | 0.76 |      |      |       | 0.76           |
| TCI4                |        |      |      |      | 0.62 |      |      |       | 0.7            |
| TCI5                | 0.41   |      |      | 0.4  |      |      |      |       | 0.65           |
| TAI1                |        |      |      |      |      |      |      |       | 0.6            |
| TAI2                |        |      |      | 0.85 |      |      |      |       | 0.72           |
| TAI3                |        |      |      |      |      | 0.96 |      |       | 0.75           |
| TAI4                |        |      |      | 0.44 |      |      |      |       | 0.59           |
| TAI5                |        |      |      | 0.62 |      |      |      |       | 0.72           |
| TAI6                |        |      |      |      |      | 0.71 |      |       | 0.76           |
| CM1                 |        | 0.66 |      |      |      |      |      |       | 0.76           |
| CM2                 |        | 0.7  |      |      |      |      |      |       | 0.71           |
| CM3                 |        | 0.62 |      |      |      |      |      |       | 0.68           |
| CM4                 |        | 0.43 |      |      |      |      |      |       | 0.61           |
| CM5                 |        |      |      |      |      |      |      |       | 0.72           |
| CM6                 |        | 0.57 |      |      |      |      |      |       | 0.58           |
| CM7                 |        | 0.61 |      |      |      |      |      |       | 0.74           |
| Eigenvalue          | 16.41  | 2.51 | 1.81 | 1.69 | 1.49 | 1.4  | 1.26 | 1.05  |                |
| % of total variance | 40.03  | 6.11 | 4.41 | 4.11 | 3.64 | 3.41 | 3.07 | 2.57  |                |
| Total variance      |        |      |      |      |      |      |      | 67.37 |                |

*Note.* BR = building relationships, VP = valuing people of different cultures, LO = listening and observation, CA = coping with ambiguity, TCI = translation of complex information, TAI = taking action and initiative, CM = conflict management.

The first EFA of 41 items resulted in eight factors, as illustrated in Table 1. Bold numbers in the table were described as a factor loading >0.5. Among all items, 28 were eliminated: 20 had a factor loading <0.5, 5 had fewer than three items with a factor constituent >0.5, and 1 had cross-loading items >0.4, which further led to the change from 3 items to 2 items with a factor constituent >0.5. Consequently, 13 items remained which were involved with three Factors: Factor 1 had four items (BR1, BR2, BR3, and BR6); Factor 2, five items (CM1, CM2, CM3, CM6, and CM7); and Factor 5, four items (TCI1, TCI2, TCI3, and TCI4). Accordingly, with 27 items excluded, the remaining 13 items were kept for further examination. The second EFA of 13 items produced three factors that consisted of the 13 items with a factor loading >0.5. However, among them, 2 items were excluded due to cross-loading items >0.4 (BR6 and TCI2); thus, 11 items remained. With 2 items excluded, Factor 1 of the second EFA included five items (CM1, CM2, CM3, CM6, and CM7); Factor 2 had three items (BR1, BR2, and BR3); and

Factor 3, three times (TCI1, TCI3, and TCI4). Accordingly, the remaining 11 items were further investigated. The third EFA of 11 items resulted in three dominant factors that were the same as those of the second EFA results. These three factors extracted from the third EFA satisfied the guideline and three criteria to keep all 11 items as described earlier in this section. Again, Factor 1 had five items which indicates conflict management; Factor 2, three items relating the competence of translation of complex information; and Factor 3, three items corresponding to building relationships. All three factors had a factor loading of  $>0.5$ . Cross-loading values of those factors ranged from 0.17 to 0.34 for Factor 1 (conflict management), 0.15 to 0.37 for Factor 2 (translation of complex information), and 0.18 to 0.25 for Factor 3 (building relationships). In terms of convergent and discriminant validity, results from the third EFA supported the three factors.

#### 4.2. Confirmatory factor analysis

This study conducted confirmatory factor analysis (CFA) on the same 134 graduates to verify the validity of the three dominant factors extracted from EFA: building relationships, translation of complex information, and conflict management. Results of the CFA revealed that the fit indices were acceptable ( $\chi^2 = 41.592$ ,  $p > .05$ ; minimum discrepancy per degree of freedom [CMIN/df] = 1.014; goodness-of-fit index [GFI] = 0.946; comparative fit index [CFI] = 0.999; incremental fit index [IFI] = 0.999; Tucker–Lewis index [TLI] = 0.999; root mean square error of approximation [RMSEA] = 0.010; standardized root mean square residual [SRMR] = 0.038). It is noted that we also performed CFA in terms of the theorized model consisting of the original seven cross-cultural competency classifications on the same sample. Results of the CFA revealed that the fit indices were weak ( $\chi^2 = 1495.32$ ,  $p < 0.01$ ; CMIN/df = 1.973; GFI = 0.659; CFI = 0.778; IFI = 0.782; TLI = 0.760; RMSEA = 0.086; SRMR = 0.080). Those results illustrated that the measurement model with a three-factor structure was better than the original. The finalized measurement model included the following 11 items as showed in Table 2.

Table 2. Eleven items of the finalized measurement model of the cross-cultural competence.

| 11 Items | Cross-Cultural Competencies  |
|----------|--|
| BR1      | Develop trustful relationships with people   |
| BR2      | Make and maintain good relationships with people                                   |
| BR3      | Build friendships with people  |
| TCI1     | Communicate with people using simple language even if the information is complex   |
| TCI3     | Use simple words to describe complicated information in a conversation with people |
| TCI4     | Translate complicated information into plain words when talking to people          |
| CM1      | Resolve conflicts among people   |
| CM2      | Develop bridges between one member and others in a conflicting situation           |
| CM3      | Alleviate conflicting situations among people                                      |
| CM6      | Decrease emotional tension among people  |
| CM7      | Act to make a situation better when people have conflicts                          |

Note. The term people in this questionnaire refers to those who have a different cultural background and/or those who have different nationalities.

#### 5. Discussion and conclusions

The study attempted to develop a cross-cultural competency scale based on the experiential model of cross-cultural learning skills. The model had seven classifications of cross-cultural competencies, but this study resulted in three latent components as a measurement model with the three competencies of building relationships (BR), translation of complex information (TCI), and conflict management (CM). These competencies reflect the interpersonal, analytical, and action areas. Based on experiential learning theory (Kolb, 1984; Kolb & Kolb, 2017), the interpersonal skill area relates to the learning mode of concrete experience (Boyatzis & Kolb, 1995; Yamazaki & Kayes, 2004) that “emphasizes feeling as opposed to thinking” (Kolb, 1984, p.68); the analytical skill area concerns that of abstract conceptualization accentuating thinking; and the action skill area involves that of active experimentation that requires taking action and practical applications. It would be inferable that those three skills areas are congruent with the affective, cognitive, and behavioral dimensions described by several studies as key dimensions of cross-cultural competency (Lloyd & Härtel, 2010; Matveer & Merz, 2014). The cross-cultural psychology literature indicated that dimensions of affect, cognition, and behavior are fundamental areas of cross-cultural psychology that focus on cultural contact with cultural

shock (Ward, Bochner, & Furnham, 2001). From this notion, the measurement model developed to analyze a degree of three cross-cultural competencies (i.e., BR, TCI, and CM) might be utilized to examine people's cultural contact including cultural shock. This raises an interesting question as to how three cross-cultural competencies in the measurement model have an influence on cultural shock. Finally, limitations of this study include methodological issues such as a small sample size, the participation of international graduate students rather than ongoing international assignees, and use of the EFA sample for CFA.

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