Measuring Cross-Cultural Orientation: Development of a New Instrument

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In this study I design and present a new instrument, Cross-Cultural Orientation Inventory (CCOI), to measure the cross cultural orientation of a person. I define cross-cultural orientation as the readiness of a person to interact with, and form a sustainable relationship with a person from a different culture. I posit that CCOI would be a valid measure of cross-cultural orientation of a person, which in turn, would be related to the cross cultural behavioral competence of that person. I design a questionnaire to represent CCOI, and assess its reliability and validity empirically. I discuss my results and the utility of the new measure for HR practitioners in recruitment and selection processes.

INTRODUCTION

In today's globalizing world, there is an acute need of cross-culturally competent managers. Treatments of intercultural sensitivity have played an important role in the scholarly literature. Research has been designed to explain and predict successful intercultural encounters (Gudykunst & Nishida, 1989; Searle & Ward, 1990). This concept also has an important place in the work of practitioners who work closely with people who engage in extensive intercultural encounters. Lack of intercultural competence has the potential to adversely impact the professional progression of people. Even academic careers are not immune from cross-cultural requirements. For example, foreign students may be forced to spend one or more extra years to attain their degrees if they are not sensitive to culturally different academic climate in different countries (Klineberg & Hull, 1979).

Researchers have investigated a number of personal characteristics and skills hypothesized to be predictive of competent interaction with culturally different others (Abe & Wiseman, 1983; Dinges & Baldwin, 1996; Hammer, Nishida & Wiseman, 1996 etc.), resulting in a list of potentially useful factors. Generally, the ability to interact is given more emphasis in the majority of studies on cross-cultural competence, with a view to delineate a valid and accurate measurement of such ability (Chen & Starosta, 2000). However, much less work seems to have been done in examining the antecedents of interculturally competent behavior, and in understanding the psycho-social processes resulting in the desired behavior. Even on the behavioral side, there seems to be a conceptual overlap between cross-cultural competence and interpersonal competence, both of which seem to emphasize the fundamental ability to show consideration for others' needs while also fulfilling one's own satisfaction and obligations to a reasonable degree (Chen & Starosta, 1996).

Although some measures have been developed to measure the behavioral competence of a person in cross-cultural settings, there is no consensus in the extant literature about the antecedents of cross-cultural competence. This study is an attempt to bring more clarity to this field. I believe that a salient antecedent of cross-cultural behavior is the mindset of a person in a cross-cultural setting. When a person is well

disposed towards a cross-cultural interaction, his responses in a cross-cultural interaction are likely to be more receptive and positive. On the other hand, if the person's mindset is not suitable for a cross-cultural encounter, he or she may not exhibit the desired behavior in the interaction. I use the term "Cross-cultural Orientation" (CCO) to describe the mindset of a person that governs his cross-cultural behavior.
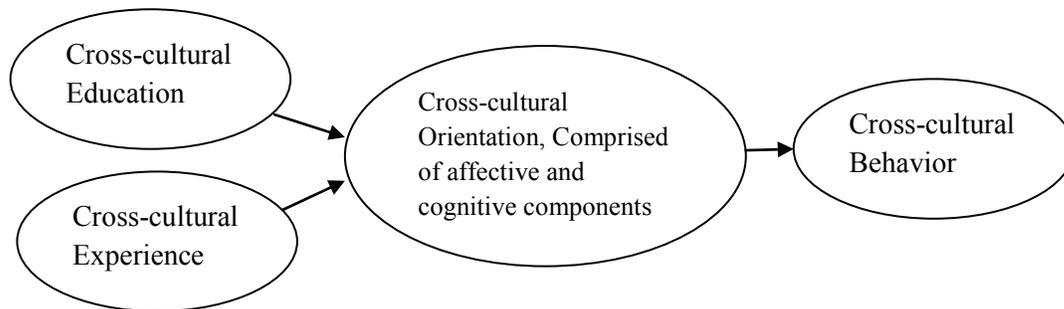
Theoretical Background

CCO, as conceptualized by me, is a new construct in the field of cross-cultural management. I define CCO as the "readiness of a person to interact with and form a relationship with a person from a different culture". CCO is conceptualized as having two dimensions; *cognitive* – which refers to the awareness and knowledge about other cultures, and *affective* – which captures the attitudinal orientation towards other cultures. In essence, a person's CCO would be a measure of the extent to which a person seems ready to interact with people from other cultures on a sustainable basis. I should clarify that CCO is concerned with long-term intercultural interaction rather than one-time encounters. When a person is in a cross-cultural situation temporarily, on a non-repeatable basis, he or she can handle that situation by projecting a behavior that seems appropriate to the occasion. However, such a situation does not speak to the propensity of the person to form a cross-cultural relationship with the interactants. But when a person needs to function in an intercultural environment for a longer term, his or her cross-cultural orientation becomes particularly salient to the exhibited behavior. Put simply, CCO refers to a person's affective and cognitive preparedness to deal with intercultural encounters on a maintainable basis.

Although the extant literature has described a number of other constructs to capture the various facets of cross-cultural manifestation, these differ from CCO in their nuances. For example, a similar construct is *cross-cultural experience* (Olson, 2009) that seeks to represent the degree of interaction a person has with people from other cultures. Conceivably, each episode of interaction with a person from other culture builds on prior experience and prepares a person for future interactions. Thus, it is somewhat similar to CCO but differs from CCO in the sense that it focuses only on prior experience. Another construct is *Intercultural competence* (Buhrmester, Furman, Wittenberg & Reis, 1988) which refers to the competence of a person in dealing with people from other cultures. It is a wider construct, which takes into account the totality of cross-cultural competence of a person in a cross-cultural setting. Thus, it would seem to partially overlap with CCO but is distinguished from the latter in terms of its focus on the behavioral skill rather on awareness or attitude.

Since the behavior of a person is primarily governed by his cognitive and affective frame of mind (Luthans & Davis, 1980), I submit that Cross-cultural orientation, which captures both attitudinal and affective dimensions of a person's mindset, is likely to be a good predictor of the behavior of a person in a cross-cultural setting. Carrying this chain of thought further, I posit that the cross-cultural orientation, in turn, is likely to be affected by the kind of education a person has received, as well as his prior experience of cross-cultural encounters. I base my logic on the fact that attitudes get formed since childhood, in which the educative years play a great role. If the instructors in a person's high school/college exhibit sensitivity towards cross-cultural issues, this is bound to develop a positive attitude in the student towards culturally different others. Similarly, opportunities for cross-cultural interaction in school and participation in multi-cultural events also shape the intercultural attitude of a person. An equally important role in developing the cross-cultural orientation of a person is played by his cross-cultural experiences. While his initial behavior might be governed by his cognitive store and current attitude, each cross-cultural experiential event serves to further develop and shape his orientation towards future events. I therefore conceptualize cross-cultural orientation in a nomological network, where education and experience of a person are antecedents of his or her cross-cultural orientation, while behavioral competence is a consequent of the cross-cultural orientation. This conceptualization is visually depicted in figure 1.

FIGURE 1
NOMOLOGICAL NETWORK OF CROSS-CULTURAL ORIENTATION (CCO)

Because the new construct defined by me is different from the constructs existing in the literature, none of the existing measuring instruments, such as the Behavioral Assessment Scale for Intercultural Communication Effectiveness (BASIC) (Koester & Olebe, 1988), Interpersonal Competence Questionnaire (ICQ) (Buhrmester et al, 1988), or the Intercultural Sensitivity Scale (ISS) (Chen & Starosta, 2000), can be used to measure Cross-cultural Orientation (CCO). To fill this void, I developed a new instrument, termed as Cross-Cultural Orientation Inventory (CCOI), to measure the cross-cultural orientation of a person. Moreover, since I conceptualized CCO as a two-dimensional construct, comprising attitudinal and awareness components, I needed to develop and validate two sub-scales to represent these two components of CCO.

DEVELOPMENT OF THE MEASURE

Based on the conceptualization and components previously discussed, I developed items to measure cross-cultural orientation. A five-point Likert scale was used to respond to each item: 5 = strongly agree, 4 = agree, 3 = neutral, 2 = disagree, and 1 = strongly disagree. Items were written to capture both the affective and cognitive dimensions of the construct. Sample items are: "I am happy to interact with people from different cultures" (affective) and "I know the cultural values and beliefs of other culture (s)" (cognitive). 49 items were initially developed for the full scale. These were made available to a group of 9 experts who had been briefed about the definition of the hypothesized construct and similar constructs. The experts were asked to select items which they thought captured cross-cultural orientation, and if so, categorize them in Attitude (affective) and Awareness (cognitive) categories. Items which were not agreed upon by 5 experts were eliminated, leaving 22 items. These items were further scrutinized and discussed in the group of experts. Finally, 17 items were shortlisted, 9 for cross-cultural Attitude, and 8 for cross-cultural Awareness dimensions of CCO, for incorporating in the questionnaire.

In line with my conceptual model, I searched for valid measures for other variables in my study. I used a 5-item scale for measuring Cross-cultural Education (adapted from Olson, 2009). Similarly a 5-item scale was used for measuring Cross-cultural Experience (adapted from Rew, 2003), and a 9-item scale for measuring Cross-cultural Behavior (Chen & Starosta, 2000). Thus a total of 36 items were included in the questionnaire, to measure the new construct as well as other, established constructs. Questions were also included for ascertaining demographic information of the respondents.

Questionnaire Administration and Sample

Undergraduate students in the colleges of Business and Engineering in a South-West University in U.S.A. comprised the sample population for the study. It was felt that these students, having been exposed to some cross-cultural education and activities, would be fairly representative of the general population.

The questionnaire was made available to students through SurveyMonkey web site, and also manually in some classes. The responses were completely voluntary and anonymous. A total of 233 students were targeted for completing the survey, of which 88 responded. The survey responses were entered into an excel sheet. Since three responses contained no demographic information, these were removed from the data set, leaving a total of 85 responses, denoting a response rate of 36.5%. 54 % of the respondents were male and the rest female. 48.2% belonged to White Caucasian ethnic group while the rest were from other ethnic groups. 17.6% of the respondents were full-time students while the rest were also holding part-time or full-time jobs.
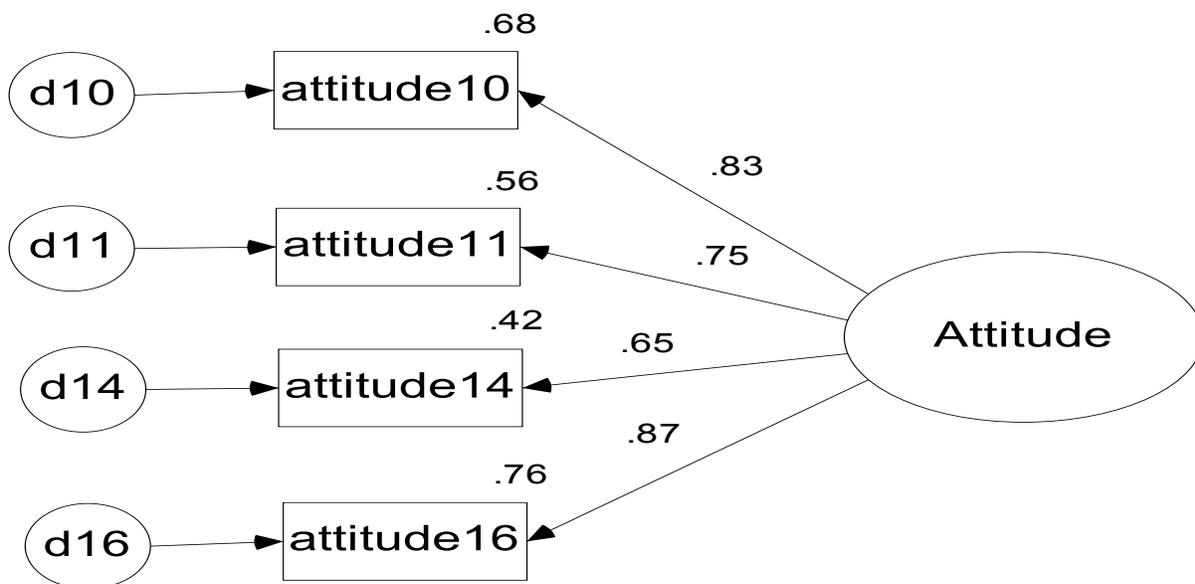
Validation of the Measure

Structural Equation Modeling (SEM), AMOS 16.0 and SPSS was employed to carry out statistical analyses of the data. When developing a new scale, researchers have recommended using a two-step approach in which the measurement models are run first to establish the unidimensionality of the scale (s) and its discriminant validity. Thereafter the structural model is analyzed to examine the relationship among various constructs (see Anderson & Gerbing, 1988). In accordance with this approach, I carried out confirmatory factor analysis of the two sub-scales of CCO in the first stage of analyses.

Confirmatory Factor Analysis (CFA)

As indicated earlier, I had incorporated 9 items for the Attitude dimension of CCO and 8 items for the Awareness dimension of CCO. Following the procedure recommended by Gerbing & Anderson (1988) for scale development, I carried out separate CFAs for the two sub-scales. Firstly, I ran the measurement model for the Attitude dimension, using AMOS 16.0. I found that some item loadings were not very high and the fit indices showed a poor fit of the model. I eliminated two items that had low loadings; this improved the model fit somewhat. However some of the residual variances were still quite high. After continuing with this iterative process, I finally ended up with 4 items (Qs 10, 11, 14 and 16 of the questionnaire) which seemed to capture the construct well. This is shown in figure 2.
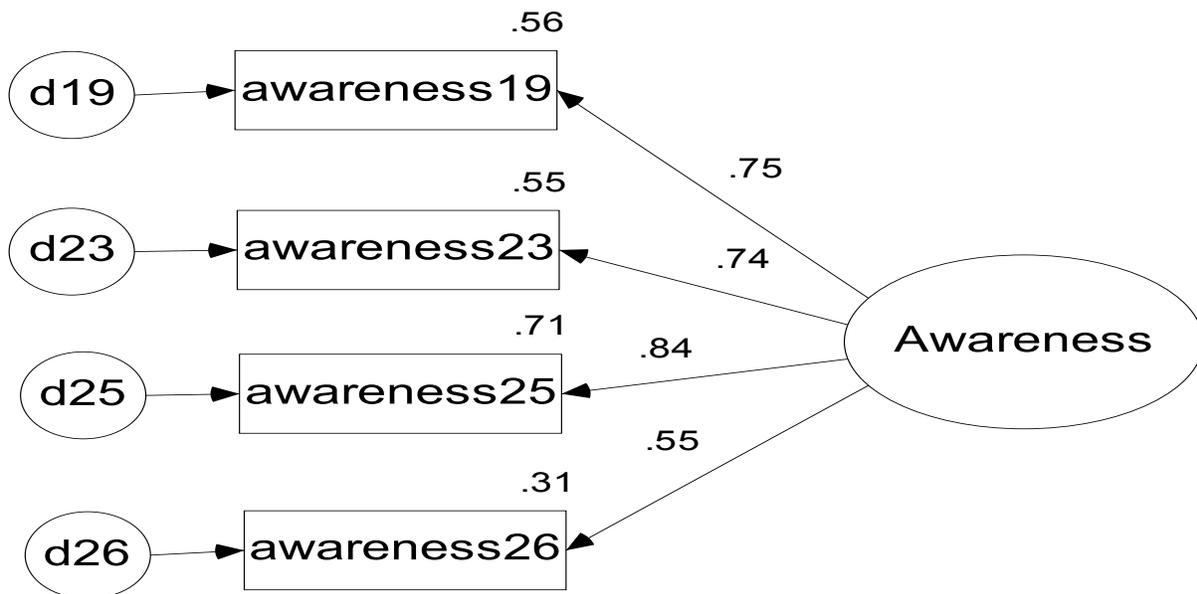
FIGURE 2
CFA – ATTITUDE DIMENSION OF CCO

As may be seen in the figure, the standardized factor loadings are much higher than 0.5. The Chi-square value for the model was 4.37, df = 2, p = 0.11 (not significant). The fitness indices were: CFI = 0.98, GFI = 0.98, RMSEA = 0.11. There is a broad consensus in the extant literature that values of CFI and GFI greater than 0.90 indicate a good fit, whereas the RMSEA is recommended to be less than .05. In my sample, the RMSEA was 0.11. However, the PCLOSE value for RMSEA was 0.16. Since PCLOSE tests the null hypothesis that RMSEA in not greater than .05, a non-significant PCLOSE indicates a close-fitting model (Kenny, 2011). Furthermore, as pointed out by Bollen & Long (1993), a number of fitness indices should be seen rather than relying on a single index. From these results therefore, I concluded that my modified sub-scale of 4 items for the attitude dimension of CCO exhibits unidimensionality and internal consistency. The coefficient Alpha for this scale was 0.85, which is well above the recommended cutoff of 0.70 (Nunnally & Bernstein, 1994).

After finalizing the sub-scale of attitude, I carried out CFA for the second sub-scale, that of Awareness dimension of CCO with 8 items that had been used in the questionnaire. Again, I found that some item loadings were not high and that some of the residual covariances were very high. I examined the items and dropped those items that seemed ambiguous since this could be a reason for low loadings. The iterative process finally culminated by cutting down the items to 4 (Qs 19, 23, 25 and 26 of the questionnaire), that had high factor loadings and the fitness indices showed every good model fit. The four-item model is shown in figure 3.

FIGURE 3
CFA – AWARENESS DIMENSION OF CCO

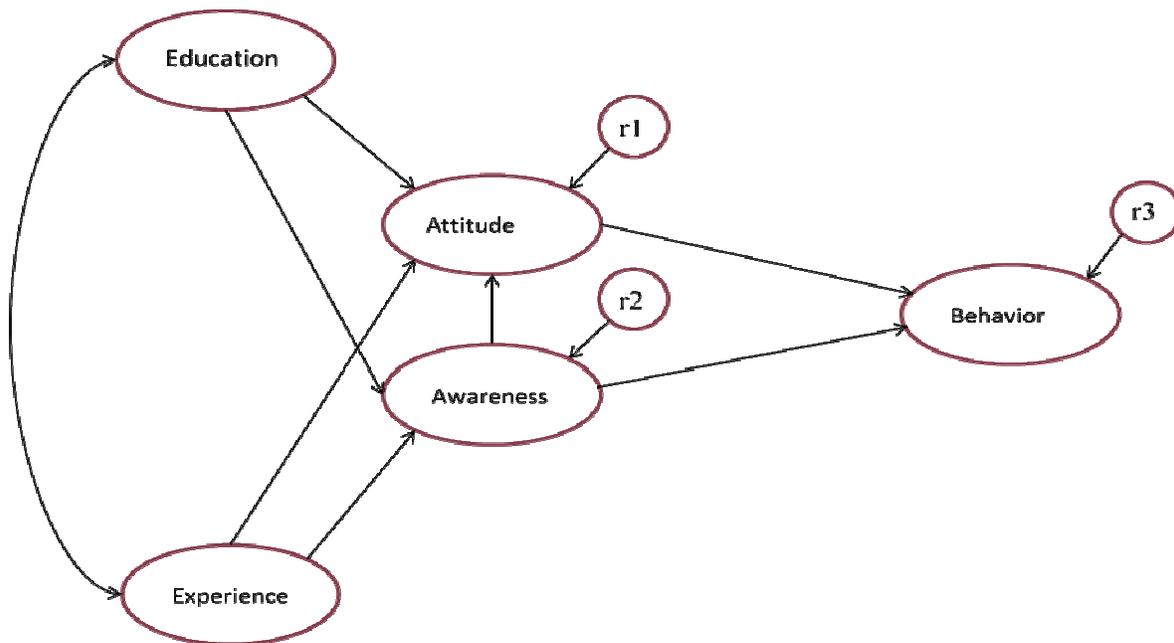The Chi-square value for the model was 2.10, df = 2, p = 0.35 (not significant). The fitness indices were: CFI = 0.99, GFI = 0.99, RMSEA = 0.02. In accordance with the norms prevalent in the field, as also quoted earlier, these values indicate excellent fit of the model to the data. From these results therefore, I concluded that my modified sub-scale of 4 items for the awareness dimension of CCO exhibits unidimensionality and internal consistency. The coefficient Alpha for this scale was 0.81, which is also quite reasonable.

Discriminant Validity

After satisfying myself about the unidimensionality and convergent validity of each of my two sub-scales, I proceeded to examine the discriminant validity of my sub-scales. Conceptually, a measure can be said to be discriminant valid if it is able to explain more than half of the variance in the focal construct, and if this variance explained is more than what can be explained due to correlation of the construct with another construct. In practical terms, discriminant validity can be assessed for two estimated constructs by comparing the Average Variance Extracted (AVE) for each of the constructs with the Squared Inter-Construct Correlation (SIC). AVE for each construct should be greater than 0.5 (Bagozzi and Yi, 1988) and AVE of each construct should be greater than the SIC between them.

According to my conceptualization, the focal construct, Cross-cultural Orientation construct, consists of two dimensions of Attitude and Awareness, and is part of a nomological network where in Cross-cultural Education and Cross-cultural Experience function as antecedents to the focal construct and the focal construct serves as an antecedent to Cross-cultural behavior. My structural model may be seen in figure 4.

FIGURE 4
STRUCTURAL MODEL

As per this structural model, I needed to test for discriminant validity of each of my sub-scale by pair-wise comparisons of each focal construct with all other constructs. Therefore I calculated the AVE for each construct and compared it to the SIC for each pair of constructs. My calculations show that AVE of my focal constructs is in the range of 0.53 to 0.67, and that AVE is more than SIC for each pair of constructs. Thus I can conclude that my sub-scales for Attitude and Awareness dimensions of CCO exhibit good discriminant validity.

Nomological Validity

In order to establish the nomological validity of my new sub-scales, I needed to carry out path analysis of my structural model, to confirm that the model fits the data well. This would be an indication that my measures behave as expected. I carried out path analysis with a number of methods, to examine the fit of my model to the data

Path Analysis with Observed Variables

In this mode of path analysis, I treated the constructs as observed variables. As indicated earlier, each construct had been measured with a number of items. I computed variables *cross-cultural education, cross-cultural experience, cross-cultural orientation-attitude, cross-cultural orientation-awareness,* and *cross-cultural behavior,* by summing the items. The descriptive statistics of these five variables in my model are given in table 1. The coefficient alpha values are shown in parentheses along the diagonal.
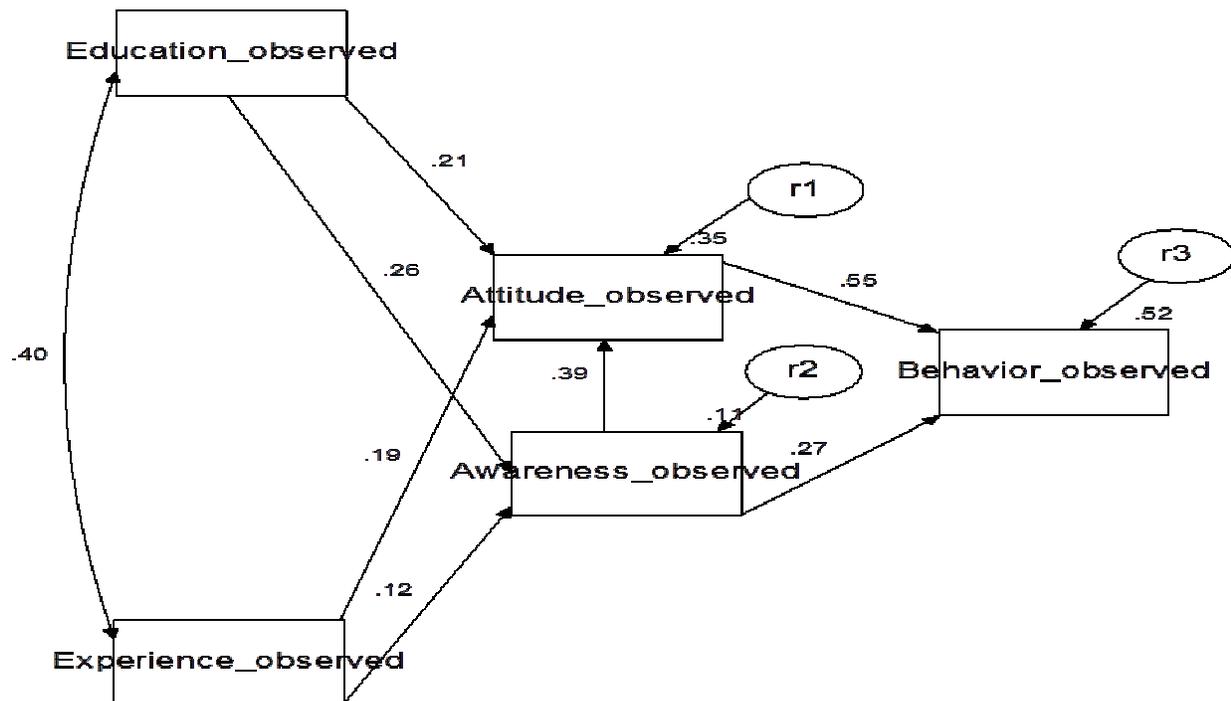
TABLE 1
DESCRIPTIVE STATISTICS

	Mean	SD	1	2	3	4	5
1. Education	3.62	0.51	(.60)				
2. Experience	3.21	0.72	0.40**	(.82)			
3. Attitude	4.01	0.59	0.41**	0.37**	(.85)		
4. Awareness	3.14	0.71	0.31**	0.23*	0.50**	(.81)	
5. Behavior	3.61	0.56	0.41**	0.28*	0.68**	0.55**	(.81)

** $p \leq .01$ (2-tailed), * $p \leq .05$ (2-tailed), N= 85

Treating latent constructs as observed variables is tantamount to assuming that the constructs have been measured without any error. Based on this assumption, I ran the path analysis in AMOs 16.0. The standardized path coefficients are shown in figure 5.

FIGURE 5
PATH ANALYSIS WITH OBSERVED VARIABLES
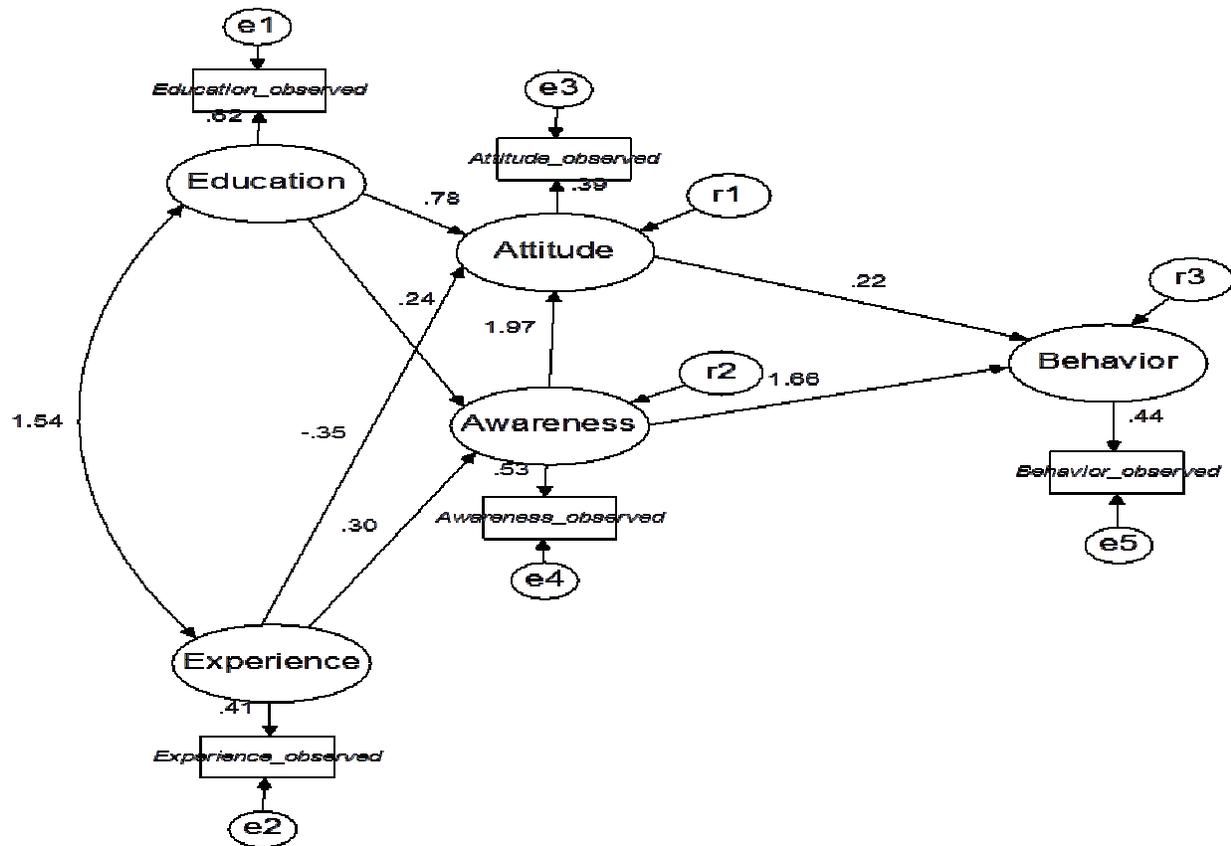**STANDARDIZED ESTIMATES**

The SEM analysis provided good evidence of a well-fitting model. The chi-square for this model was 2.16, df = 2, p = 0.34. Furthermore, other fitness indices were within acceptable limits: RMSEA = .03. CFI = .99, GFI = .99. All the paths in the model were significant except the path Experience → Awareness. However, there is adequate theoretical justification to reason that cross-cultural experience of a person contributes to his cross-cultural awareness. Therefore, it is justifiable to retain this path in the model.

Path Analysis with Reliabilities

Since treating constructs as observed variables ignores measurement error, I ran a more exact analysis of my model by taking the errors into account. This procedure involves calculating and fixing the measurement error of each observed variable. This procedure ensures that the measurement error at the observed variable stage is not allowed to spread throughout the structural model. So this procedure is expected to yield a better estimate of path coefficients. I calculated the error for each observed variable as per the formula; Error = (1-cronbach Alpha) X Variance. The resulting values were used to fix the error parameter values of observed variables in AMOS 16.0 and the model was run. Figure 6 shows the standardized estimates for this model.

FIGURE 6
PATH ANALYSIS WITH RELIABILITIES
STANDARDIZED ESTIMATES

The fitness indices for this model were: Chi-square = 2.47, df = 2, p = 0.29. RMSEA = .05, CFI = .99, GFI = .99. These results indicate a good fit of the model with data. Some path coefficients were observed to be greater than one. This could be an artifact of low sample size.

Based on the above path analyses, I conclude that the structural model specified by me fits the data well. This means that the new sub-scaled developed by me for the Attitude and Awareness dimensions of Cross Cultural Orientation (CCO) behave as expected in a specified nomological network.

Multi-Group Path Analysis

As a final step in my examination of the construct validity of my measures, I carried out a multi-group analysis of the configural model, to assess invariance across multiple groups. Since I had gender information available for 83 responses, I split the sample in males (n=46) and females (n=37). I ran the configural model (shown in figure 7) across both groups simultaneously, as recommended by Byrne (2009 p. 209). A baseline model was computed and compared to more constrained models by specifying Measurement weights to be equal, and then by specifying both measurement weights and structural covariances to be equal across groups. The results indicate that the models fit the data well. The fitness indices for these models are shown in table 2.

FIGURE 7
CONFIGURAL MODEL FOR MULTI-GROUP ANALYSIS

TABLE 2
FITNESS INDICES OF MULTI-GROUP ANALYSIS

Model	Chi-square	Df	P-level	RMSEA	CFI	GFI
Unconstrained model	41.60	38	.32	.03	.98	.90
Measurement weights	43.09	44	.51	.00	1.00	.90
Structural covariances	45.30	47	.54	.00	1.00	.89
Independence model	240.20	56	.00	.20	0.00	.51

CONCLUSION

On the basis of results presented in foregoing paragraphs, I established that the scale developed by me to measure Cross Cultural Orientation (CCO) has two dimensions, cross-cultural attitude, and cross-cultural awareness, each of which is measurable by a four-item scale. The sub-scales exhibit excellent internal and external consistency and nomological validity. Further, the scales developed by me seem invariant across multiple groups. The final scale, Cross-Cultural Orientation Inventory (CCOI) is given in the Appendix.

PRACTICAL IMPLICATIONS

Increasing globalization of business has highlighted the need of managers who have cross-cultural competence and are thus able to function effectively across cultures and also deal with a culturally diverse work force. It is therefore imperative that recruiters are equipped to adequately assess the suitability of persons they are hiring, for functioning in a cross-cultural environment. As I discussed in earlier paragraphs, cross-cultural orientation (CCO) is an antecedent of cross-cultural behavior of a person. Thus, an assessment of a person's cross-cultural orientation is useful in predicting his or her behavior in cross-cultural scenarios. The measure developed by me is parsimonious and simple to administer. It can be used at the time of initial recruitment, and also while selecting existing employees for assignments that might require cross cultural adaptation and competence. Thus, the new instrument would be a useful addition to the toolkit of HR practitioners as they grapple with the challenges of shaping the work force to meet the needs of globalization.

LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

Although my analysis has developed reasonable confidence in the construct validity of my scale, it must be pointed out that construct validity is an ongoing process (see J Paul Peter, 1981). A number of studies, at different times may be needed to fully validate these scales. My study is not without limitations. One limitation is small sample size, which can lead to fluctuation in the estimations at times. It is therefore recommended to validate the scales using a larger sample size.

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APPENDIX

CROSS-CULTURAL ORIENTATION INVENTORY (CCOI)

A scale to measure cross-cultural orientation of a person

(Attitude dimension)

1. I am happy to interact with people from different cultures
2. I feel I should make friends with people from diverse cultures
3. I think my beliefs and attitudes are shaped by my culture
4. I should know about other cultures to be fair to people from different cultures

(Awareness dimension)

5. I know the cultural values and beliefs of other culture (s)
6. I know about body language practices of cultures other than mine
7. I am open-minded to people from other cultures
8. People from some cultures avoid eye contact while talking

Note: Response to each item is to be obtained on a Likert-type 5-point scale; strongly agree, agree, neutral, disagree, and strongly disagree