



## THE ANTECEDENTS OF EXPATRIATES' CREATIVE ENGAGEMENT

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### ABSTRACT

**Purpose**—This study aims to examine the significance of cultural intelligence and cultural adjustment on expatriates' creative engagement. This study also extends relevant literature on expatriate management to examine the relationship between cultural intelligence, cultural adjustment, and expatriates' creative engagement through a mechanism taking into account the moderating roles of psychological climate.

**Design/methodology/approach**—The sample was collected from 328 Taiwanese expatriates working in Taiwanese MNC subsidiaries operating in China (Shanghai). Structural equation modeling in AMOS 21 and hierarchical regression (SPSS 19) were used to test six research hypotheses.

**Findings**—The SEM results indicate that cultural intelligence and cultural adjustment make significant contributions to expatriates' creative engagement. The results of a hierarchical regression analysis also confirm the moderating effects of the psychological climate. These findings suggest that cultural intelligence and psychological climate can play important roles as predictors of expatriates' creative engagement in cross-cultural environments.

**Research limitation/implications**—The main research limitations include the use of a cross-sectional research design using Taiwanese MNC subsidiaries in China as the sample and using self-reported questionnaires. Future studies can adopt a longitudinal research design or a case study to compliment the results of this study. This study focuses on the relationships between cultural intelligence, cultural adjustment, and expatriates' creative engagement through the moderating roles of psychological climate which have rarely been investigated. The findings of this study are also very important for academia and professionals in an expatriate context.

**Originality/value**—This study extends the theoretical model of cultural intelligence and psychological climate based on multiple perspectives of work-role transition, the principle of attribution, and social learning theories. Using a specific Chinese context, the current paper highlights the value and necessity of cross-cultural adjustment for successful expatriation.

**Keywords:** cultural intelligence, cultural adjustment, creative engagement, psychological climate

**Paper Type:** Research paper



## **INTRODUCTION**

Employee creativity has become a core competency, which helps organizations to sustain their competitive advantage (Chen, Li, and Tang, 2009). Employee creativity is of great significance to organizational effectiveness and survival (Pieterse, van Knippenberg, Schippers, and Stam, 2010). Most contemporary researchers and theorists have adopted a definition which can be described as the product or outcome of a development process (Shalley, Gilson, and Blum, 2009; Zhang and Bartol, 2010a). Creativity in the workplace is defined as being the production of novel and useful ideas or solutions in a given specific situation (Byron, Khazanichi, and Nazarian, 2010; George and Jones, 2012).

To date, most research on creativity has focused on creative performance, which refers to creative outcomes, i.e., the novel and useful ideas concerning products, services, or procedures which are ultimately produced (Shalley and Zhou, 2008; Zhang and Bartol, 2010a; Zhou and George, 2003). The present study focuses on creativity as an individual's ability to generate creative approaches to resolve problems (Hirst, Knippenberg, and Zhou, 2009). Although the consequences and antecedents of employee creativity have been well-documented by several recent studies in various local settings (Hirst *et al.*, 2009; Hon, 2011), expatriate creativity in cross-cultural settings has been largely ignored. Based on this rationale, creative engagement on the part of employees is related to the pro-active pursuit and learning of new ideas and approaches to improve individuals' achievement in the workplace (Zhang & Bartol, 2010a). In an expatriate context, expatriates' creative engagement can be defined simply as being the production of novel and useful ideas to resolve a problem, and as engagement which has the hallmarks of creative thinking and intelligent behavior.

With the growing diversity of multinational corporations (MNCs), which has resulted in their having a global presence, many modern MNCs may require or assign creative expatriates to deal with the core tasks which occur between the host and home companies (Rose and Kumar Subramaniam, 2008). The effectiveness of international assignments is of great significance to sustain organizational competitiveness, and firms may recruit expatriates who have a high degree of cultural awareness, including cultural intelligence and cultural adjustment, to enable them to effectively interact with people from different cultural backgrounds (Shannon and Begley, 2008). Such interaction seems to be difficult for expatriates and companies because cultural barriers often cause misunderstandings, which detract from efficient and effective interaction (Takeuchi, Tesluk, Yun, and Lepak, 2005). In a global context, interest in how MNCs compete when some individual expatriates deal with cultural diversity more effectively than others has gained increasing importance because of international assignments for expatriates (Shannon and Begley, 2008). Despite a growing amount of research on expatriate effectiveness in international assignments, which has included studies on expatriate performance (Kim, Kirkman, and Chen, 2008; Lee and Sukoco, 2010; Wu and Ang, 2011), there is still a lack of sufficient knowledge of the factors which influence expatriates' creative engagement.

Purposively, this present study extends the CQ and cultural adjustment literature proposed by Ang and Van Dyne (2008) in order to explore the role of CQ and its effects on cultural adjustment and expatriates' creative engagement, and also to determine how cultural adjustment

influences expatriates' creative engagement in cross-cultural environments. It also examines the moderating effects of the psychological climate in the influence of CQ on cultural adjustment and expatriates' creative engagement, and the influence of cultural adjustment on expatriates' creative engagement, respectively. It is posited that, when the psychological climate is positive, cultural intelligence will be high rather than low, and that it will be critical to cultural adjustment and expatriates' creative engagement. These research purposes are also elaborated in the research framework illustrated in Figure 1.

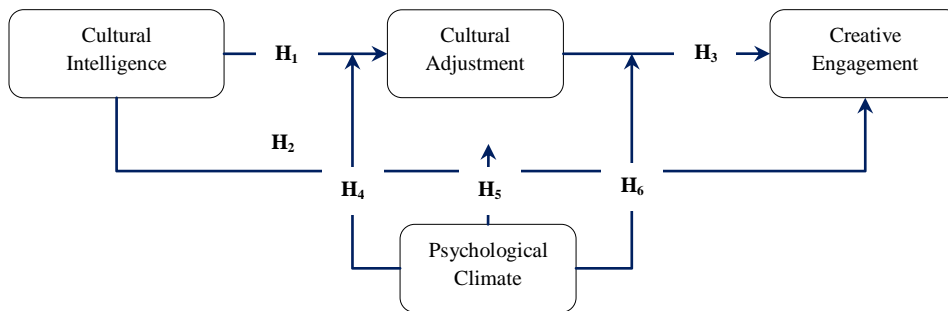


Figure 1: Influence of cultural intelligence on creative engagement

## THEORETICAL FRAMEWORK AND HYPOTHESES

### *The influence of cultural intelligence on cultural adjustment*

Cultural intelligence (CQ) plays an important role in developing cross-cultural relationships because individuals with high CQ tend to enjoy interacting with people from different cultural backgrounds (Chen, Lin, and Sawangpattanakul, 2011; Shannon and Begley, 2008). CQ is defined as being an individual's capability to identify or behave appropriately when adapting to new cultures (Ang *et al.*, 2007). According to Ang and Van Dyne (2008), CQ is composed of four factors (i.e., metacognitive CQ, cognitive CQ, motivational CQ, and behavioral CQ). CQ is proposed to be a key predictor of cultural adjustment, which can enable expatriates to be successful during international assignments (Kim *et al.*, 2008; Templer, Tay, and Chandrasekar, 2006). The rationale for the relationship between CQ and cultural adjustment can be explained by an attribution theory of achievement, motivation, and emotion (Weiner, 1985). The principle of attribution theory argues that individuals view ability as being a relatively stable emotion when dealing with a host cultural environment. This study argues that individuals who are able to identify, recognize, and reconcile cultural differences because of a higher level of CQ will better adjust to a new work environment and are more likely to be effective workers in the host country (Ang and Van Dyne, 2008; Kim *et al.*, 2008). Consequently, individuals with a high level of CQ are better able to effectively interact with people from a culturally-different society (Ang and Van Dyne, 2008), because it is likely that they gain more appropriate emotional satisfaction by interacting with local people (Kim *et al.*, 2008). This, in turn, is critical to their cultural adjustment. Based on the above discussion, the following hypothesis is proposed:

Hypothesis 1: Cultural intelligence has a positive influence on cultural adjustment.



### *The influence of cultural intelligence on expatriates' creative engagement*

CQ literature demonstrates that expatriates with a strong sense of motivational CQ will facilitate cognitive processes and perform well in a variety of settings, such as those requiring high quality decision-making, goal-setting, and academic achievement, and will, in turn, achieve high levels of creative engagement (Bandura, Barbaranelli, Caprara, and Pastorelli, 2001; Luszczynska and Schwarzer, 2005). Metacognitive and cognitive CQ may influence expatriates to creatively engage in areas which require higher levels of culturally-related cognitive processing and more knowledge about the different cultural backgrounds which exist in the host country (Earley and Ang, 2003; Kim *et al.*, 2008). Behavioral CQ influences expatriates' creative engagement can be explained by social learning theory (Bandura, 1977), which suggests that individuals' interaction with other groups of people by learning about different cultural backgrounds (Tariques and Takeuchi, 2008) will influence their creative performance at work (Templer *et al.*, 2006). When expatriates understand the cultural differences in the host culture, they are more likely to effectively adapt to the new cultural setting (Chen *et al.*, 2011), which will then be likely to result in promoting a better performance in terms of their creative engagement. Therefore, this study argues that individual expatriates with a higher level of CQ will be better able to increase their generative, creative, proactive, and reactive ideas, which will lead to the effective completion of their international assignments. Based on this rationale, the following hypothesis is proposed:  
Hypothesis 2: Cultural intelligence has a positive influence on expatriates' creative engagement.

### *The influence of cultural adjustment on expatriates' creative engagement*

According to Vianen, Pater, Kristof-Brown, and Johnson (2004), cultural adjustment is conceptualized as being the degree of psychological comfort an expatriate has with various aspects of the host culture. Cultural adjustment has been primarily defined as being the degree of psychological comfort an expatriate feels in new cultural situations. In expatriation literature, Black and Stephens (1989) identify three facets of cultural adjustment, such as general adjustment—adjusting to housing, food, shopping, and other aspects of the foreigner culture, work adjustment—meeting job responsibility and performance expectations, and interactional adjustment—socializing and speaking with host-country nationals. The stronger expatriates' ability to engage in creative work, the more likely they are to become well-adjusted to a new cultural environment (Kraimer, Wayne, and Jaworski, 2001; Mol, Born, Willemsen, and Van Der Molen, 2005). It is argued that cultural adjustment may have an influence on individuals' creative engagement. Therefore, the following hypothesis is proposed:  
Hypothesis 3: Cultural adjustment has a positive influence on expatriates' creative engagement.

### *The moderating effects of psychological climate*

It was argued in the previous section that CQ influences cultural adjustment and expatriates' creative engagement, and that cultural adjustment influences expatriates' creative engagement, respectively. Further, it was suggested that these relationships may be qualified by expatriates' perception of the psychological climate in multi-cultural environments. This model applies the moderating effects of the psychological climate on the relationship between cultural intelligence, cultural adjustment, and creative engagement. In an unfamiliar or negative psychological climate,



expatriates may have less cognition about the motivation to adapt to the new cultural environment, and this may lead to negative work attitudes and outcomes, such as high turnover, job dissatisfaction, and poor performance (Parker *et al.*, 2003). The rationale of the psychological climate is addressed from the perspective of social cognitive theory (Bandura, 2001; James, Hater, Gent, and Bruni, 1978). Psychological climate is defined as expatriates' perception of the work environment in which their work behavior occurs based on their experience within an organization (James and Sells, 1981; Koys and DeCotiis, 1991).

A positive psychological climate is expected to provide a cognitive representation of expatriates' work environment which enables individuals to enhance an already high level of CQ and cultural adjustment. Expatriates with a high level of CQ and a positive psychological climate will better adjust to the new work environment in the host country, because it is likely that they will gain more emotional satisfaction by interacting with local people (Kim *et al.*, 2008). This study argues that, if individuals find a positive psychological climate in the host cultural environment, this may make the variance in expatriate CQ levels more important in relation to their adjustment and creative engagement in work. This situation may require expatriates to have a high level of CQ in order for them to adjust well and, in turn, enhance their creative engagement. Based on this rationale, the following hypotheses are proposed:

Hypothesis 4: The psychological climate moderates the relationship between cultural intelligence and cultural adjustment so that the relationship between CQ and cultural adjustment is stronger when the psychological climate is positive.

Hypothesis 5: The psychological climate moderates the relationship between cultural intelligence and expatriates' creative engagement so that the relationship between CQ and expatriates' creative engagement is stronger when the psychological climate is positive.

James *et al.* (2008) argue that the psychological climate is associated with employees' evaluation of different aspects of the work environment. When employees evaluate their work environment in a positive way, they tend to enhance their identification with their job and organization, and thus are more likely to display extra-role behavior which is beneficial for the organization for which they work (Wei, Han, and Hsu, 2010). Similarly, expatriates with a positive psychological climate may perceive that variances in cultural adjustment levels are more important in relation to expatriates' creative engagement. This situation will also require expatriates to have a high level of cultural adjustment so that they can engage more creatively at work. Based on this rationale, the following hypothesis is proposed:

Hypothesis 6: The psychological climate moderates the relationship between cultural adjustment and expatriates' creative engagement, so that the relationship between cultural adjustment and expatriates' creative engagement is stronger in a positive psychological climate.



## METHODS

### *Samples and data collection*

The sampling process involved two phases. Firstly, emails were sent to the human resource department of each home MNC to ask for the personal details of appropriate expatriates (i.e., Taiwanese expatriates in China) to participate in this study. A total of 68 MNCs responded. Secondly, a purposive sampling technique was adopted to send questionnaires to invite “three to four” expatriates in each department among 68 MNCs to participate in using an email-based survey. A total of 52 MNCs were collected, which included 344 expatriates from both departments. However, 16 questionnaires had to be excluded as outliers, and these were deleted using the graphic method, with a residual scatter plot in the range of  $\pm 3$  standard deviation (Hair, Black, Babin, and Anderson, 2010). Finally, a total of 328 valid questionnaires from 48 MNCs were determined to be usable. The average number of expatriates in each department was 3.45, and the effective responsive rate was 35.55 percent.

### *Measures and variables*

#### *Cultural intelligence*

The CQ self-report scale developed by Van Dyne, Ang, and Koh (2008) was adopted for the study. This consisted of a total of 20 items and four dimensions. All the items were measured on a 5-point Likert scale (1 = strongly disagree; 5 = strongly agree).

#### *Cultural adjustment*

Three sub-dimensions and 9 items of cultural adjustment adopted from Black (1988). All the items were measured on a 9-point semantic differential scale (-5 = not adjusted at all; +5 = very well adjusted).

#### *Creative engagement*

Two factors and 8 items of creative engagement developed by Zhang and Bartol (2010b). All the items were measured on a 5-frequency scale (1 = never, 2 = rarely, 3 = occasionally, 4 = frequently, and 5 = very frequently).

#### *Psychological climate*

Six items of the psychological climate developed by Wei, Han, and Hsu (2010) were adopted for this study. All the items were measured on a 5-point Likert scale (1 = strongly disagree; 5 = strongly agree).

The questionnaire items were translated from English to Chinese. A standard translation and back-translation procedure was performed to ensure the accuracy of the meaning of the measured



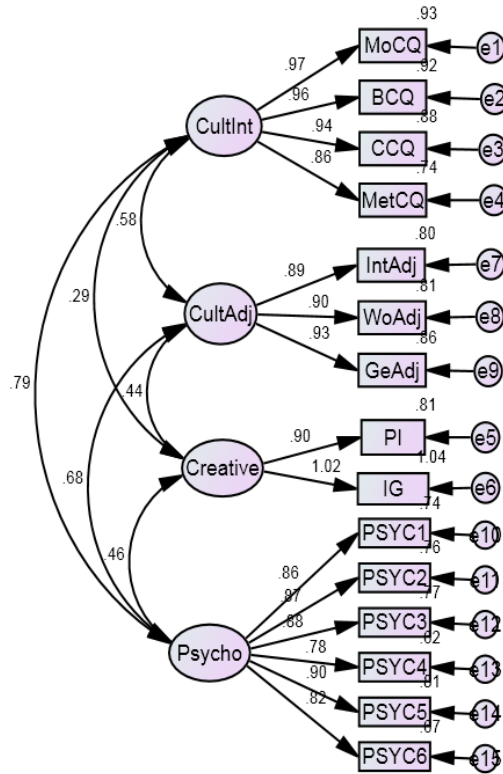
items. The details of questionnaire items and the Cronbach's alpha reliability are reported in the Appendix: Index items.

#### *Confirmatory factor analysis (CFA)*

A confirmatory factor analysis (CFA) was performed using AMOS 20 to evaluate the distinctiveness of the measures used in the present study. Anderson and Gerbing's (1988) research was adopted to assess the convergent and construct validity of the measurement model. CFA procedures have two order factor models (Koufteros, Babbar, and Kaighobadi, 2009). A first order-factor model was adopted to examine each individual research construct, and the results of this procedure indicated that the standardized loading for all items exceeded .70 and that the *t-values* were higher than 1.96 ( $p < .05$ ), thus satisfying the threshold recommended by Hair *et al.* (2010) and Kline (2011). Then, a second-order factor CFA were conducted to examine the overall model fit of each construct. The results indicated that all research constructs were reliable and satisfied the threshold values, which exceeded .70.

Finally, the mean scores of the individual factors of each research construct (i.e., cultural intelligence, cultural adjustment, and expatriates' creative engagement) were computed to conduct the second order CFA in order to examine the overall appropriateness of the measurement model, as shown in Figure 2. The results showed that the overall goodness-of-fit assessment satisfied the threshold of  $\chi^2 = 132.649$ ;  $df = 68$ ;  $GFI = .949$ ;  $AGFI = .910$ , and  $RMR = .048$ , thus indicating that the research model could be presented as a good model fit with adequate convergent validity and construct reliability (Gerbing and Anderson, 1992; Hair *et al.*, 2010).

The common method variance is adopted to validate inflated or deflated the strength of the relationship among the research constructs (Podsakoff, MacKenzie, Lee, and Podsakoff, 2003). To assess the potential impact of this form of bias in this study, discriminant validity was tested in three steps. Firstly, a Harman one-factor test was conducted (Podsakoff and Organ, 1986), which loaded all the variables into a principal component factor analysis. The results revealed that no single factor dominated (ten factors were generated with 82.5% of the total variance, with factor 1 only 28.89% of the variance). Secondly, convergent validity was demonstrated, since the average variance extracted (AVE) values for all constructs was higher than the suggested threshold value of .50 (Fornell and Larcker, 1981). Discriminant validity was determined by comparing the square root of the AVE with the Pearson's correlations among the constructs (see Table 1). All the AVE estimates can be seen to be greater than the corresponding inter-construct square correlation estimates in Table 2. Based on these results, it seems that common method bias is unlikely to be a problem with regard to the data (Gefen, Straub, and Boudreau, 2000).



Model=Standardized estimates  
 Group=Group number 1  
 Ch-square=132.649,  
 df=68, Chi-square/df=1.951,  
 GFI=.949, AGFI=.910,  
 NFI=.977, CFI=.989,  
 RMR=.048, RMSEA=.054, P=.000

*Note: CultInt=Cultural intelligence; CulAdj= Cultural adjustment; Creative=Creative Engagement; Psychol=Psychological climate.*  
 Figure 2 Second-order factor model (Overall model)



Table 1 Descriptive statistics and correlations among the research constructs ( $N=328$ ).

Variable	Mean	Std. D	1	2	3	4	5	6	7	8	9	10	11	12
1.MetCQ	4.147	.878	<b>.913</b>											
2.CCQ	4.159	.924	.581**	<b>.956</b>										
3.BCQ	4.409	.781	.645**	.686**	<b>.919</b>									
4.MoCQ	4.364	.785	.646**	.688**	.636**	<b>.957</b>								
5.GeAdj	4.013	.783	.539**	.576**	.540**	.626**	<b>.945</b>							
6.WoAdj	3.625	.886	.581**	.551**	.509**	.486**	.411**	<b>.873</b>						
7.IntAdj	3.899	1.052	.620**	.554**	.533**	.542**	.424**	.509**	<b>.898</b>					
8.ProIde	4.460	0.790	.635**	.581**	.686**	.632**	.526**	.471**	.574**	<b>.92</b>				
9.IdeGen	4.463	0.764	.690**	.518**	.664**	.531**	.494**	.459**	.561**	.682**	<b>.955</b>			
10.PsyCli	3.768	1.451	.692**	.612**	.580**	.584**	.460**	.546**	.646**	.613**	.618**	<b>.939</b>		
11.LA	2.366	1.578	.188*	.128*	.137*	.073	.057	.073	.079	.094	.131*	.105	1	
12.Edu	2.564	1.050	.082	.082	.073	.057	.035	.073	.112*	.015	.083	.109*	.027	1

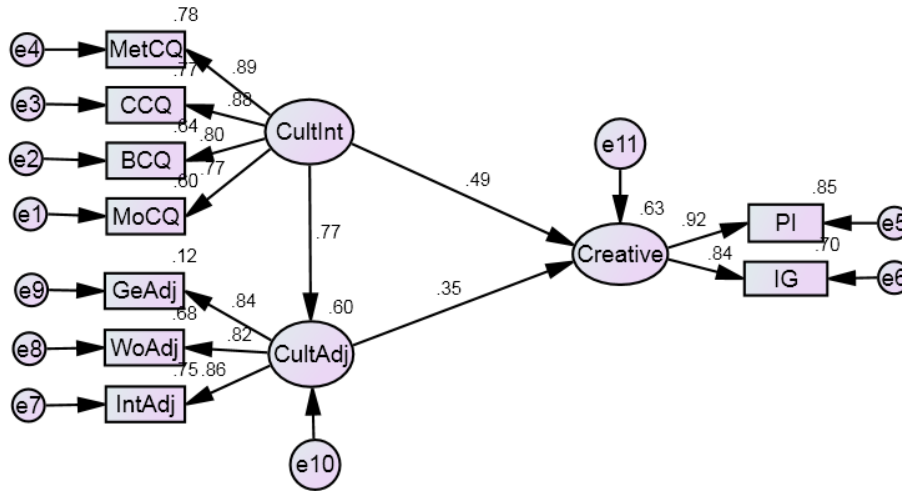
\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

*Internal consistency reliabilities appear as bold numbers along the diagonal. MetCQ=Metacognitive CQ; CCQ= Cognitive CQ; BCQ=Behavioral CQ; MoCQ=Motivational CQ; GeAdj=General adjustment; WoAdj=Work adjustment; IntAdj=Interactional adjustment; PI=Problem identification; IG=Idea generation; Psc=Psychological climate; LA= Length of assignment; Edu=Education.*

## RESEARCH FINDINGS AND DISCUSSION

Structural equation modeling (SEM) was applied to test the maximum likelihood estimate method and Hypotheses 1-3. The results showed (see Table 3 & Figure 3) that  $\chi^2/df = (28.009/15) = 1.867$ ; GFI = .983; AGFI = .948, and  $p = .022$ , were satisfied with the threshold suggested by Hair *et al.* (2010). Hypothesis 1 predicted that cultural intelligence would have a positive impact on cultural adjustment. This finding provided support for Hypothesis 1 ( $\beta = .773$ ;  $p < .001$ ;  $t$ -value = 13.943). The results of this study confirmed the studies of Ang and Van Dyne (2008), Kim *et al.* (2008), and Templer *et al.* (2006). Hypothesis 2 predicted that cultural intelligence would have a positive impact on expatriates' creative engagement. The results provided support for Hypothesis 2 ( $\beta=.489$ ;  $p < .001$ ;  $t$ -value = 5.505). Similarly, this study also found that cultural adjustment had a significant and positive influence on expatriates' creative engagement ( $\beta=.353$ ;  $p < .001$ ;  $t$ -value = 3.745), which provided support for Hypothesis 3. The results also suggested that the relationship between cultural intelligence and creativity engagement was mediated by cultural adjustment, which was suggested by Sobel's (1982) test, which states that the mediating effect is significant if the  $z$ -test statistic is higher than the threshold value of  $t$ -value = 1.96. As shown in Table 4, the  $z$  score for cultural intelligence  $\rightarrow$  cultural adjustment  $\rightarrow$  expatriates' creative engagement; the  $z$ -test = 4.159 > 1.96, which indicates that the mediating effect of cultural adjustment was significant for the influence of cultural intelligence on expatriates' creative engagement.



Model=Standardized estimates  
Group=Group number 1  
Ch-square=28.009,  
df=15, Chi-square/df=1.867,  
GFI=.983 , AGFI=.948,  
NFI=.987, CFI=.994,  
RMR=.015, RMSEA=.051, P=.022

Figure 3 Results of structural model (SEM)

Note: *CultInt*= Cultural intelligence; *CultAdj*= Cultural adjustment; *Creative*= Creative engagement *MetCQ*= Metacognitive CQ; *CCQ*= Cognitive CQ; *BCQ*= Behavioral CQ; *MoCQ*= Motivational CQ; *GeAdj*= General adjustment; *WoAdj*= Work adjustment; *IntAdj*= Interactional adjustment; *PI*= Problem identification; *IG*= Idea generation.

Table 2 Results of structural equation modeling (SEM).

Hypothesis	Path	Direct effects	Indirect effects	Total effects	S.E	t-value
Hypothesis 1	Cultural intelligence (CQ) → Cultural adjustment (CUA)	.773***			.062	13.943
Hypothesis 2	Cultural intelligence (CQ) → Expatriate creative engagement (ECE)	.489***			.080	5.505
Hypothesis 3	Cultural adjustment (CUA) → Expatriate creative engagement (ECE)	.353***	.273***	.626***	.075	3.745
<b>Sobel test<sup>®</sup></b>						
CQ → CUA → ECE: z-test= 4.159 > t-value = 1.96, (p<.001), a=.773, SE <sub>a</sub> =.062, b=.353, SE <sub>b</sub> =.080						
<b>Fit indices</b>						
Chi-square ( $\chi^2$ ) = 28.009, p=.022						
df = 15						
GFI = .983						
AGFI = .948						
NFI = .987						
CFI = .994						
RMR = .015						
RMSEA = .051						

Note: \*\*\* p<.001, \*\* p<.01, \* p<.05, and significant level at t-value >1.96; GIF = Goodness of Fit Index; AGFI = Adjusted Goodness of Fit Index; RMR = Root Mean Square Residual; NFI = Normed Fit Index; CFI = Comparative Fit Index; RMSEA= Root Mean Square Error of Approximation.

Table 2 provides a summary of the models and results used to test Hypotheses 4-6. Since cultural intelligence is measured by using continuous variables, the regression can be used to retain the continuous nature of the variables without losing information or reducing the power to detect the interactive effects (Aiken, West, and Reno, 1991; Cohen, Cohen, West, and Aiken, 2003). However, it is possible that variables may correlate with each other (high multicollinearity), and thus, the independent variables were mean-centered to reduce these effects (Frazier, Tix, and Barron, 2004). Then, a hierarchical regression was adopted to test the moderating effects of the psychological climate.

Table 3 The moderating role of psychological climate.

Independent variables	Dependent variables		
	Cultural adjustment	Expatriate creative engagement	
<i>Main effects</i>	Model-1 (H4)	Model-2 (H5)	Model-3 (H6)
Cultural intelligence (CQ)	.313 <sup>***</sup> ( <i>t</i> =7.918)	.505 <sup>***</sup> ( <i>t</i> =9.425)	-
Cultural adjustment (CUA)	-	-	.277 <sup>***</sup> ( <i>t</i> =3.438)
Psychological climate (PSYC)	.264 <sup>***</sup> ( <i>t</i> =5.290)	.350 <sup>***</sup> ( <i>t</i> =4.667)	-
<i>Interaction effects</i>			
CQ x PSYC	.078 <sup>**</sup> ( <i>t</i> =2.738)	.131 <sup>***</sup> ( <i>t</i> =3.374)	
CUA x PSYC	-	-	.166 <sup>***</sup> ( <i>t</i> =3.546)
<i>Control variables</i>			
Length of assignment	.030 ( <i>t</i> =1.159)	.009 ( <i>t</i> =.241)	.057 ( <i>t</i> =1.420)
Education	.002 ( <i>t</i> =.066)	.023 ( <i>t</i> =.649)	.026 ( <i>t</i> =.648)
R <sup>2</sup>	.784	.602	.487
ΔR <sup>2</sup>	.005	.014	.020
ΔF	7.496	11.382	12.571
Sig. ( <i>p</i> )	.007	.001	.000

Note: <sup>\*\*\*</sup> *p*-value <.001; <sup>\*\*</sup> *p*-value <.01; <sup>\*</sup> *p*-value <.05; significant level at *t*-value >1.96

As shown in Table 3, the psychological climate has a direct effect on cultural adjustment (Model-1:  $\beta = .264$ ; *t*-value = 5.290; *p* = .000) and expatriates' creative engagement (Model-2:  $\beta = .350$ ; *t*-value = 4.667; *p* = .000). The results also revealed that the psychological climate moderates the influence of cultural intelligence on expatriates' creative engagement (Model-1:  $\beta = .078$ ; *t*-value = 2.738; *p* = .007), which indicates support for Hypothesis 4. The psychological climate also moderates the relationship between cultural adjustment and expatriates' creative engagement (Model-2:  $\beta = .131$ ; *t*-value = 3.374; *p* = .001), providing support for Hypothesis 5. Furthermore, the psychological climate was also found to moderate the relationship between cultural adjustment and expatriates' creative engagement (Model-3:  $\beta = .166$ ; *t*-value = 3.546; *p* = .000), indicating support for Hypothesis 6. These moderating effects are also elaborated in Figures 4-6, respectively.

Following the procedures of Aiken *et al.* (1991) and Cohen *et al.* (2003), Figure 4 presents the moderating effect of the psychological climate and indicates that expatriates with a positive psychological climate ( $\bar{Y} = 4.87$ ) and higher cultural intelligence tend to achieve the highest level of cultural adjustment. Expatriates with higher cultural intelligence, but a negative psychological climate ( $\bar{Y} = 4.35$ ), tend to make less of a cultural adjustment. However, expatriates in a positive

psychological climate ( $\bar{Y} = 3.894$ ), but with lower cultural intelligence, tend to have the lowest levels of cultural adjustment. Those in a negative psychological climate with lower cultural intelligence also achieve a lower cultural adjustment. These results suggest that expatriates in a positive psychological climate can experience the highest levels of cultural adjustment in situations where they exhibit higher cultural intelligence. Thus, the above statements confirm Hypothesis 4.

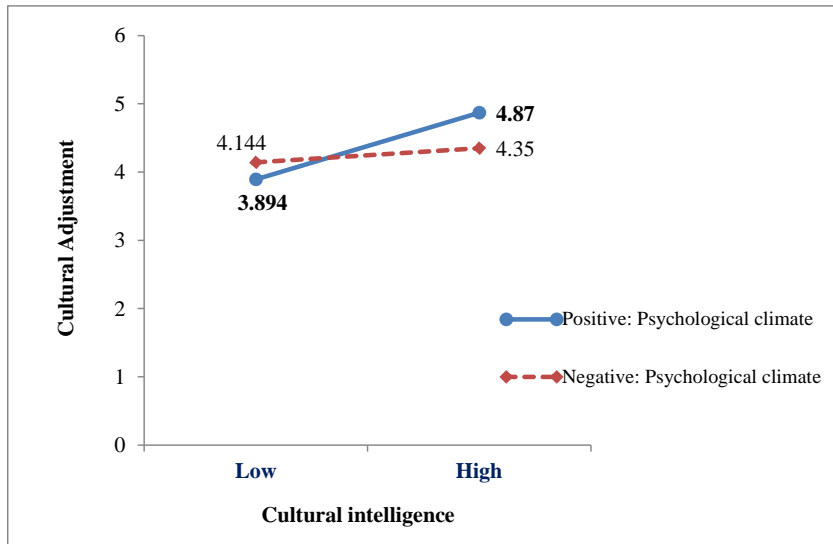


Figure 4. Hypothesis 4

Figure 5 indicates that expatriates in a positive psychological climate ( $\bar{Y} = 4.251$ ) and with higher cultural intelligence tend to achieve the highest level of creative engagement. As predicted, expatriates with higher cultural intelligence but in a negative psychological climate ( $\bar{Y} = 4.088$ ) tend to have lower creative engagement. However, expatriates in a positive psychological climate ( $\bar{Y} = 3.191$ ) but with lower cultural intelligence tend to have the lowest level of creative engagement. Those in a negative psychological climate and with lower cultural intelligence also achieve lower creative engagement. These results suggest that expatriates in a positive psychological climate can achieve the highest levels of creative engagement when they also have higher cultural intelligence. Thus, these statements provide support for Hypothesis 5.

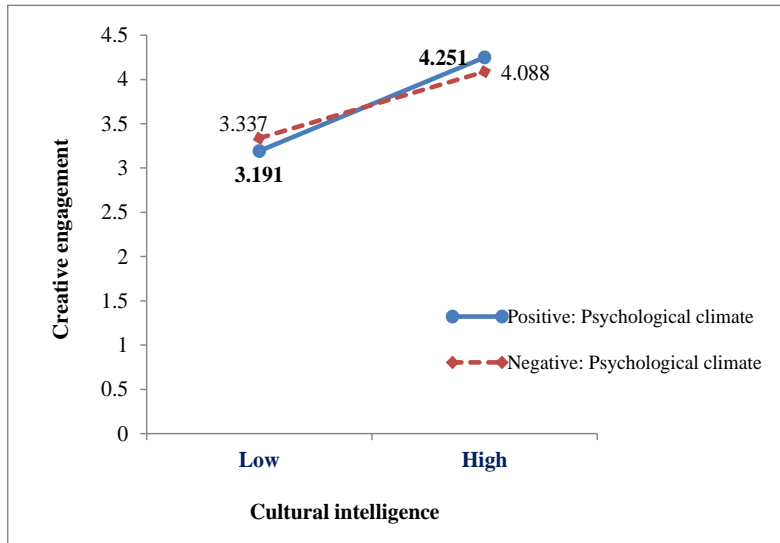


Figure 5. Hypothesis 5

Figure 6 presents the moderating role of the influence of the psychological climate on the relationship between cultural adjustment and expatriates' creative engagement. The results indicate that expatriates in a positive psychological climate ( $\bar{Y} = 4.957$ ) and with a higher level of cultural adjustment tend to achieve the highest level of creative engagement. Expatriates with a higher level of cultural adjustment but in a negative psychological climate ( $\bar{Y} = 4.616$ ) tend to have a lower level of creative engagement. However, expatriates in a positive psychological climate ( $\bar{Y} = 4.09$ ) but with a lower level of cultural adjustment tend to have the lowest level of creative engagement. Those in a negative psychological climate and with a lower level of cultural adjustment also achieve a lower level of creative engagement. The results suggest that expatriates in a positive psychological climate can achieve the highest levels of creative engagement when combined with higher levels of cultural adjustment. Thus, the above rationales and discussions indicate support for Hypothesis 6.

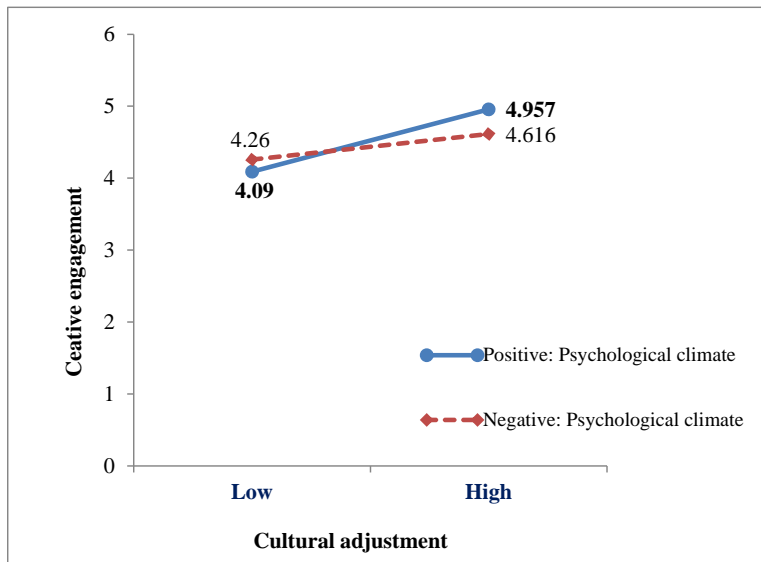


Figure 6. Hypothesis 6

### RESEARCH IMPLICATIONS

The research findings of this study indicate that expatriate creativity also plays an important role in the effective performance of international assignments in 48 Taiwanese MNCs in China. Thus, the present study developed and tested a comprehensive model which encompassed the antecedents of expatriates' creative engagement in the context of an international assignment by integrating multiple social learning, social cognition, and work-role transition theories. It is critical to gain a better understanding of the factors which enable expatriates to perform effectively in cross-cultural environments (Kim *et al.*, 2008). The results indicated that all four dimensions of cultural intelligence (CQ) make a significant contribution to expatriate adjustment. This is in line with previous empirical findings, which have suggested that expatriates who are highly capable of interacting with different cultures will have a higher level of adjustment (Ang and Van Dyne, 2008; Kim *et al.*, 2008; Lee and Sukoco, 2010).

In particular, the results suggested that the relationship between CQ and expatriates' creative engagement was mediated by cultural adjustment. This was suggested by Sobel's test and was in line with Kim *et al.* (2008), who proposed that cultural adjustment plays an important role as a key mediator between cultural intelligence and expatriates' performance. Thus, it can be assumed that cultural adjustment plays an extremely critical role, having both a mediating and directing effect on the effectiveness of international assignments, including expatriates' performance (Kim *et al.*, 2008; Kraimer *et al.*, 2001; Lee and Sukoco, 2010) and expatriates' creative engagement.

Furthermore, the results of this study also indicated that the psychological climate can moderate the influence of the relationship among cultural intelligence, cultural adjustment, and expatriates' creative engagement. When the level of CQ is low, the psychological climate may lead to expatriates having a negative perception of their working environment, which results in lower



levels of cultural adjustment and creative engagement. In summary, this study suggested that expatriates who are more interested in experiencing diverse cultures, and are thus motivated to do so, will have more self-confidence in their ability to deal with new cultures, and in turn, will more effectively complete assignments. When expatriates exhibit a high capability with regard to cultural intelligence and the ability to overcome cultural differences, they are better able to work and interact with local co-workers, thus improving their ability to generate useful ideas and achieve better levels of performance. Empirically, the extension of cultural intelligence and the adjusted framework developed by previous studies to predict expatriates' creative engagement were also confirmed by this study. In addition, the overall prediction concerning the relationship among cultural intelligence, cultural adjustment, and expatriates' creative engagement was supported by social learning, social cognition, and work-role transition theories (Kim *et al.*, 2008; Takeuchi *et al.*, 2005). In addition to the expatriate context, the key antecedents of CQ may be important predictors of employees' work outcomes in service industries, such as hospitality and tourism. Because these industries require employees to interact with customers from diverse cultural backgrounds, employee CQ may influence customer satisfaction, and in turn, the performance and effectiveness of organizations (Kim *et al.*, 2008).

### **LIMITATIONS AND FUTURE RESEARCH**

This study proposed that cultural intelligence influences cultural adjustment and expatriates' creative engagement by the mechanism of a psychological climate. It also discussed the moderating role of the psychological climate on the relationship among cultural intelligence, cultural adjustment, and expatriates' creative engagement. However, the study had some limitations which will provide interesting aspects for future research. Firstly, it focused on expatriates' creative engagement as a dependent variable, but future studies may need to include other indicators of international assignment effectiveness, such as job satisfaction, organizational commitment, and return intention. Secondly, it did not consider the effects of families' (or spouses') adjustment on expatriates' creative engagement. This topic should be addressed in future research because the existence of spouses and children can have a cross-over effect on expatriates' adjustment and creative engagement (Kim *et al.*, 2008; Takeuchi *et al.*, 2005). It is evidence to show that spousal adjustment influences cross-cultural adjustment and work-related outcomes (Shaffer and Harrison, 1998). Thus, future research should include the effects of family adjustment on the relationship among CQ, cultural adjustment, and creative engagement. Thirdly, cultural differences and cultural distance between host and home cultures should be included in the moderating effect among the relationship of CQ, cultural adjustment, and creative engagement (Kim *et al.*, 2008).

Finally, the sample in this study was predominantly Taiwanese expatriates, which focused on a Chinese context. It is suggested that future research should consider Chinese leadership styles (i.e., transformational and transactional leadership) because it is well known that leaders can influence the degree of role stress and uncertainty experienced by expatriates, which, in turn, may affect the level of cultural intelligence, cultural adjustment, and expatriates' creative engagement. Thus, future studies should test these variables in this study's model with samples from different populations. This may provide a greater insight into the phenomenon of expatriates' adjustment and creative engagement in cross-validation situations, such as Europe



versus Latin America or Asia versus Europe. These additional efforts will further enhance the validity and generalizability of the findings. In short, the research presented here contributes to an understanding of a CQ framework which can be integrated into an international assignment context.

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## Appendix: Index Items

### Cultural intelligence (CQ)

#### *Metacognitive CQ* ( $\alpha=.913$ ; $AVE=.844$ )

1. I am conscious of the cultural knowledge while I interact with other people from different cultural background (MetCQ1).
2. I adjust my cultural knowledge as I interact with people from a culture that is unfamiliar to me (MetCQ2).
3. I am conscious of the cultural knowledge I apply to cross-cultural interactions (MetCQ3).
4. I check the accuracy of my cultural knowledge as I interact with people from different cultures (MetCQ4).

#### *Cognitive CQ* ( $\alpha=.956$ ; $AVE=.776$ )

1. I know the legal and economic systems of other cultures (CCQ1).
2. I know the rules (e.g., vocabulary, grammar) of other languages (CCQ2).
3. I know the cultural values and religious beliefs of other cultures (CCQ3).
4. I know the marriage systems of other cultures (CCQ4).
5. I know the arts and crafts of other cultures (CCQ5).
6. I know the rules for expressing nonverbal behaviors in other cultures (CCQ6).

#### *Motivational CQ* ( $\alpha=.919$ ; $AVE=.803$ )

1. I enjoy interacting with people from different cultures (MoCQ1).
2. I am confident that I can socialize with locals in a culture that is unfamiliar to me (MoCQ2).
3. I am sure I can deal with the stresses of adjusting to a culture that is new to me (MoCQ3).
4. I enjoy living in cultures that are unfamiliar to me (MoCQ4).
5. I am confident that I can get accustomed to the shopping conditions in a different culture (MoCQ5).

#### *Behavioral CQ* ( $\alpha=.945$ ; $AVE=.782$ )

1. I change my verbal behavior (e.g., accent, tone) when a cross-cultural interaction requires it (BCQ1).
2. I use pause and silence differently to suit different cross-cultural situations (BCQ2).
3. I vary the rate of my speaking when a cross-cultural situation requires it (BCQ3).
4. I change my nonverbal behavior when a cross-cultural situation requires it (BCQ4).
5. I alter my facial expressions when a cross-cultural interaction requires it (BCQ5).



## Cultural adjustment

*General adjustment* ( $\alpha=.945$ ;  $AVE=.782$ )

1. How adjusted are you to the food in foreign country? (GeAdj1)
2. How adjusted are you to shopping in foreign country? (GeAdj2)
3. How adjusted are you to the weather in foreign country? (GeAdj3)
4. How adjusted are you to generally living in foreign country? (GeAdj4)
5. How adjusted are you to the transportation system in host country? (GeAdj5)

*Work adjustment* ( $\alpha=.873$ ;  $AVE=.767$ )

1. How adjusted are you to your job and responsibilities? (WoAdj1)
2. How adjusted are you to working with local co-workers? (WoAdj2)

*Interactional adjustment* ( $\alpha=.898$ ;  $AVE=.821$ )

1. How adjusted are you to supervising foreigner subordinates? (IntAdj1)
2. How adjusted are you to working with your foreigner outside your company? (IntAdj2)

## Creative Engagement

*Problem identification* ( $\alpha=.920$ ;  $AVE=.763$ )

1. I spend considerable time trying to understand the nature of the problem (PI1).
2. I think about the problem from multiple perspectives (PI2).
3. I decompose a difficult problem/assignment into parts to obtain greater understanding (PI3).

*Idea generation* ( $\alpha=.955$ ;  $AVE=.811$ )

1. I consider diverse sources of information in generating new ideas (IG1).
2. I look for connections with solutions used in seeming diverse areas (IG2).
3. I generate a significant number of alternatives to the same problem before I choose the final solution (IG3).
4. I try to devise potential solutions that move away from established ways of doing things (IG4).
5. I spend considerable time shifting through information that helps to generate new ideas (IG5).

*Psychological climate* ( $\alpha=.939$ ;  $AVE=.679$ )

1. My managers in this organization are easy to talk to about job-related problems (PSYC1).
2. My managers in this organization support subordinate delivery of new ideas (PSYC2).
3. Subordinates have effective channels to express their opinions' and 'superiors accept subordinates' suggestions and implement them (PSYC3).
4. My managers in this organization encourage subordinates to be creative (PSYC4).
5. My managers in this organization follow through on their commitments to subordinates (PSYC5).
6. My managers are quick to recognize good performance (PSYC6).