

## **Cultural Adaptation: A Mediator between Cultural Intelligence and Academic Performance in a Thai Context**

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*Received: August 23, 2022   Revised: October 14, 2022   Accepted: April 4, 2023*

### **Abstract**

Seminal research on cultural intelligence is ubiquitous at an organizational level, albeit research at an educational level, especially in a Thai context is scant. Using a quota sample of 426 students, this quantitative paper gathered data from three subgroups in Bangkok: Thai, Chinese and ASEAN from two educational settings. Cultural Intelligence was measured using the "Four Factor Cultural Intelligence" Scale (CQS) of Ang et al., (2007), constituting 20 items, answered on a 7-point Likert-type scale. To measure sociocultural adjustment, the Sociocultural Adaptation Scale (SCAS-R), of Wilson (2013), constituting 21 items, answered on a 5-point Likert-type scale was used. Psychological adjustment was measured using the Psychological Adjustment Scale of Demes and Geeraert (2013), constituting 10 items, answered on a 7-point Likert-type scale. The relationship between the four dimensions of cultural intelligence to academic performance and the relationship of sociocultural adaptation and psychological adjustment as mediators between cultural intelligence and academic performance was hypothesized. Results of Structural Equation Modeling did not support the prediction of the relationship between the four dimensions of cultural intelligence and academic performance of students. The modification indices of the AMOS program testing the relationship between socio-cultural adaptation and psychological adjustment and academic achievement manifested an indirect relationship of the cultural intelligence on the academic achievement via socio-cultural adaptation. Students, who are coached prior to actual immersion in a culture chosen to complete their studies, could alleviate culture shock, adapt better to the new abode and score better grades.

**Keywords:** Cultural adaptation, Cultural intelligence, Academic performance

## Introduction

### **“The key to success is often the ability to adapt” (Brandt, 2022)**

With ongoing globalization, the topic of adjustment of expatriates is of relevance since they are considered a resource that is expensive as well as difficult to shift (Glanz & Van der Sluis, 2001). Often, expatriates relocate with their family to the host culture and their children attend public or private universities. This new generation of second culture students' need to adjust adequately to the new, non-exposed culture for acculturation and assimilation to be lucrative. Cross-border education as well as cross-cultural communities will continue to flourish and it is inevitable for forces of globalization to shape international students' mindset (Gunter & Raghuram, 2018).

The establishment of the ASEAN Economic Community (AEC) in 2015, comprising of 10 member countries, enabled a free flow of goods, services, investment, capital and skilled labor which created a single market and also recognized the Mutual Recognition Arrangements (MRAs), that permitted a unifying qualification for certain professions like accountants, architects, doctors, dentist, nurses, engineers', tourism and surveyors (Bangkok Post, 2015). The Master Plan for ASEAN connectivity 2025, will focus on facilitation of labor and academic flexibility, by encouraging exchange programs, permitting credit transfers and attesting qualification agreements (Country Report, 2019). Thailand also continues to cooperate in the SHARE project, organized by ASEAN and EU that enhances internationalization and regional unity of ASEAN higher educational institutions as well as students (SHARE: Policy Dialogue Webinar Series on 23-25 November 2021). Bangkok, the capital of Thailand is also one of the most attractive tourist destinations in Asia and ranked number three on the Euro monitor International's top 100 city destinations (Tourism Authority of Thailand, 2015). Alongside tourism, Thailand also became a popular study destination, subsequently attracting an influx of a total of 12,000 international students in 2017, falling third place after Malaysia and Singapore as a study location. Most students belonged to the ASEAN region with Chinese students being the largest group, followed by Myanmar, Cambodia, Laos and Vietnam respectively (Office of Higher Education Commission, 2019).

As of 2021, Thailand is a host to almost 30,000 visitors for both long and short term and still falling third place in Asia as a study hub (Daniel, 2021). Thus, merging international students with Thai students can create a multicultural environment leading to the enrichment of a global perspective. Compared to cultures in Southeast Asia, Thai culture per se is unique and complex (Pimpa, 2012), owing to its deep rooted norms and communication and social interaction styles (Holmes & Tangtongtavy, 2003; Thapatiwong, 2011), on account of never being colonized (Vailati, 2014). Simultaneously, international students may face a dilemma about which culture to follow when exposed to a culture very different from their own (Brown & Holloway, 2008). Cultural intelligence may help to mitigate the impact of culture shock experienced by students and this makes it a unique construct, since it is indicative of skills required to survive in a diverse and unfamiliar culture (Presbitero, 2016). Cultural intelligence may help to mitigate the impact of culture shock experienced by students and this makes it a unique construct since it is indicative of skills required to survive in a diverse and unfamiliar

culture. A relevant question is “*Do students possess enough knowledge about a host culture in order to acculturate and adapt themselves and achieve the determined Grade Point Average, while pursuing a degree?*”.

### **The concept of cultural intelligence (CQ)**

Cultural intelligence became a formal concept with Earley and Ang (2003), writing a book called, *Cultural Intelligence: Individual Interactions across Cultures*. Over the years the concept of cultural intelligence progressed with global conferences being held and eventually the first article about the measurement and the construction of the scale by Ang et al., in 2007.

Cultural quotient (CQ), is broader and multidimensional, owing to the focus on the entire group and culture rather than one self. Earley and Ang (2003), defined cultural intelligence as the ability for persons to adjust and connect to a new culture other than their own and is crucial for separating individual differences and helping people understand one another. Earley and Ang (2003), posited that cultural intelligence includes 4 dimensions for adjustment in culturally diversified situations which are:

**Cognitive/knowledge cultural intelligence-** akin to mental processes and learning of norms, beliefs and practices followed in different cultures (Earley & Ang 2003; Huff et al. 2014; Rose et al., 2010) which is learnt from tacit and explicit knowledge. Knowledge CQ is required to understand the cultural similarities and differences as they come across different cultures (Brislin et al., 2006). The legal, political, economic and social systems together with the value system embedded in a particular culture, helps a person to gain insights about the host culture (Ang et al., 2007). The legal, political, economic and social systems together with the value system embedded in a particular culture, helps a person to gain insights about the host culture (Ang et al., 2007).

**Metacognitive/strategic cultural intelligence-** akin to higher-order mental processes and knowledge that a person acquires and uses to understand about a culture and have control over thought processes related to the culture (Flavell, 1979). Metacognitive CQ is needed for paying attention to the cultural preference of others and investigating the assumptions in a culture to make adjustments in the cognitive models, in the process of an interaction and after the interactions. (Brislin et al., 2006; Triandis, 2006). The person can make observations, then rehearse and plan how to make adjustments to the norms of a country or group (Ang & Van Dyne, 2008)

**Motivational cultural intelligence-** akin to a person's drive towards learning and adjusting to situations different from their own. When people are proactive and can control their emotions, beliefs and behavior they can achieve their goals (Kanfer & Heggstad, 1997). High motivational CQ individuals can focus their energy and attention on cross-cultural situations because of interest which is intrinsic (Deci and Ryan, 1985), and are assured about their cross-cultural ability (Bandura, 2002). Self-efficacious persons possess higher scores on motivational cultural intelligence (Ng & Earley, 2006), since they are assured about their cross-cultural ability (Bandura, 2002).

**Behavioral cultural intelligence**-akin to the person's ability to manifest proper verbal and non-verbal behaviors and actions while interacting with person from other cultures. The person needs to be flexible and display a variety of behaviors to adjust. A person with high behavioral CQ may display the right behaviors, like the tone of voice, the words, the gestures and facial expressions (Gudykunst et al., 1988). Using the right body language and appropriate words relevant to a culture can help with successful interactions (Ang et al., 2007).

In addition, Ang et al. (2007); Leung et al. (2014), theorized that CQ is a constituent of intercultural competence and important for understating cultural adjustment. Chirkov et al. (2007), attributed CQ to better subjective well-being, intensifying academic performance of international students, which can be equated with socio-cultural and psychological adjustment over time (Lin et al., 2012; Ward et al., 2011). CQ may not only facilitate cultural adaptation, but cultural adaptation may influence academic performance of individual students (Earley & Ang, 2003; Gabel et al., 2005; Yoo et al., 2006; Reynolds & Constantine, 2007; Moon, 2010). Although not all dimensions of CQ impact cultural adaptation (Mokhothu & Callaghan, 2018), CQ is considered a discerning form of intelligence which enhances individuals to behave in an appropriate manner in culturally diverse situations (Ang & Van Dyne 2015; Schreuders-van den Bergh & Du Plessis 2016).

### **The concept of cross-cultural adaptation (CA)**

Cross-Cultural adaptation can be defined as the degree to which an expatriate is physically and psychologically comfortable with various aspects of the unknown/new/foreign environment or the host culture. Earlier research identified cross-cultural adjustment as a unidimensional concept (Torbiorn, 1982), but currently cross-cultural adaptation has emphasized on 3 dimensions (Black et al., 1991a) which are;

**1. Work adjustment:** this refers to the job descriptions, the amount of effort involved in the job as well as standards for performance pertaining to the job. If similarities exist between the job conducted in the parent and host country, work adjustment is easier (Black et al., 1999).

**2. Interaction adjustment:** this refers to the ability to have successful interactions with persons from the other/host culture. Becoming familiar with the host countries communication practices is necessary for competence and putting aside old ways of communication helps to acquire new ways of communicating. According to, Black et al. (1991b), interaction adjustment is the most arduous because of the communication differences between the individual and the persons from the host culture.

**3. General adjustment:** this refers to how comfortable a person is with the overall conditions of living (Black, 1988), which include factors like climatic conditions and other facilities like food, expenditure for living, housing, transportation, health, education etc. (Black & Stevens, 1989).

CA is a multidimensional construct and an adaptation process can be impacted by individual, demographic and contextual factors (Ang et al., 2007; Ward & Kennedy, 1999; Yang et al., 2006). In retrospect, students are not engaged in any job at present and in this case it is preferable to measure students' socio-cultural and psychological adjustment in order to get

a comprehensive idea of how students adapt to a new culture. Socio-cultural adaptation is concerned with factors that allow a person to go through the host culture on a daily basis effectively. Psychological adaptation is concerned with the experiences that a person has in terms of happiness and anxiety. These two aspects of adaptation are distinct and need not always be correlated (Ward et al., 1998) and therefore should be quantified independently (Motti-Stefanidi et al., 2008; Ward & Kennedy, 1996).

The facets of CA can be affiliated with CQ, since the dimensions of CQ essentially impact associations with host country nationals, a person's work settings and general conditions of living (Kodwani 2012; Bhaskar-Shrinivas et al., 2005; Lin et al., 2012; Wang et al., 2015). Both, cultural intelligence and cross-cultural adaptation are important for forming successful relationship and being effective with assignments abroad (Earley & Ang, 2003; Thomas & Inkson, 2004). Khan et al. (2020), not only consented that CQ promotes CA of international students but CA, can act as a mediator between CQ and academic performance of international students. A plethora of research on CQ and CA relationship exists but limited research on CA as a mediator between CQ and academic performance of international students exists.

### **The concept of academic achievement (AA)**

Academic achievement according to McClelland et al. (1989), is concerned with human motives and needs and refers to striving more than others in order to reach a desired goal or end state. McClelland (1980; 1985) believed that the amount of energy a person invests in a task depends on their own initiative. When people have the implicit need to achieve the amount of persistence in terms of energy to achieve the goals in effort-sensitive tasks can be predicted (Biernat, 1989).

Theorists agree that intelligence can be manifested in different scenarios apart from academic settings (Ang & Van Dyne 2015; Kurpis & Hunter 2016). CQ can be nurtured through hands-on approaches, experiences and internal processing (Bhawuk et al., 2008; Leung et al. 2014; Williams & Johnson 2011). An international student's priority is to make the intercultural transition lucrative, whilst focusing on their academic goals (Chen 2009; Cushner & Karim 2004; Gelfand et al. 2007; Lin et al., 2012).

Recent findings of Wang and Zhang (2021), on 452 students studying in the United States, indicate a partial support for the relationship between CQ and Grade Point Average with motivational and behavioral CQ having a greater impact. Wang et al., (2020), indicated a moderate relationship between CQ and academic achievement but cultural adjustment significantly mediates the effect between emotional intelligence, cultural intelligence and academic performance of international students. Researchers like Lee et al. (2013); Isfhani et al. (2013); Chen et al. (2011); Vedadi et al. (2010), evaluated job performance as a replacement for academic performance and detected a direct relationship between employee CQ and outstanding job results. A multitude of factors may impact students' academic performance but adjustment has been considered the most crucial (Lin & Yi, 1997; Poyrazli et al., 2002; Andrade, 2006).

In a Thai context, most studies focused on organizations, rather than academic settings. Studies focusing on the direct relationship of cultural intelligence and academic performance are limited. Secondly most research focused on adaptation as a summative factor rather than as separate socio-cultural and psychological factors. Hence the researcher was prompted to investigate the relationship between CQ, both aspects of CA and academic performance.

Poonpol (2015), investigation on 377 expatriates in Thailand found that cultural intelligence does have an indirect impact on performance with cross-cultural adaptation being a mediator. Poonpol (2017), inquiry on 420 international ASEAN students, designated personal, social and cultural factors as having a direct causal association with the cross-cultural adjustment. Seriwatana and Charoensukmongkol (2020), investigation of Thai cabin crew, reinforced the negative relationship between the CQ of cabin crew members and their job burnout. Thamarat and Arthittiya (2021), consent that metacognitive, cognitive and motivational cultural intelligence of expatriates is significantly related to general adjustment and interactive adjustment at work with the exception of behavioral cultural intelligence. Hence the researcher was prompted to investigate the relationship between CQ, CA and academic performance.

### **Hypotheses**

1. Cultural intelligence i.e. strategic/metacognitive CQ (a), knowledge /cognitive CQ (b), motivational CQ (c) and behavioral CQ (d) are related to academic achievement of students in Thailand.

2. Cultural adaptation, (i.e. socio-cultural and psychological) acts as a mediator between cultural intelligence and academic performance of students in Thailand.

### **Materials and methods**

In the emic phase of the descriptive research, a questionnaire survey was devised consisting of 3 parts: Part 1, computed the dimensions of cultural intelligence; Part 2, computed the dimensions of the cultural adaptation and psychological adjustment; and Part 3, congregated the demographic data of the students.

Following the format designed by Ang et al (2007), based on Ackerman's theory of adult intellectual development (1996), the "Four Factor Cultural Intelligence" Scale (CQS), was utilized, constituting 20 items answered on a 7-point Likert-type scale, ranging from strongly agree (7) to strongly disagree (1). The students were asked to rate if the item in the questionnaire pertains to their strategic, knowledge, behavioral and motivational dimensions of cultural intelligence, with higher scores indicating positive responses. The mean scores varied from 4.614 to 5.097 thus exceeding the midpoint of 4.00 for all dimensions of cultural intelligence.

Twenty-one items of the revised version of the Socio-cultural Adaptation Scale (SCAS-R), proposed by Wilson (2013), were utilized to measure cultural adaptation, with items answered on a 5-point Likert-type scale, ranging from not at all competent (1) to extremely competent (5). The students were asked to envisage their lives, in a culture different from their

own, regarding components of interpersonal communication, work performance, personal interests and community involvement, ecological adaptation and language proficiency. Higher scores indicated better adaptability. The obtained mean of 3.727 with the standardization of 0.528, was higher than the midpoint of 3.00 for socio-cultural adaptation.

Psychological adjustment was measured by ten items of the Psychological Adjustment Scale (PAS), proposed by Demes and Geeraert (2014), with items answered on a seven-point rating scale from never (1) to always (7). The students had to rate the frequency of the experienced feelings, like loneliness, homesickness and nervousness. Four items were phrased positively, while six items were phrased negatively. Higher scores indicated better psychological adjustment. The mean score of psychological adjustment was 4.161 which exceeded the mid-point of 4.00 minutely.

In addition, the students were requested to give the data on their GPA in the demographic data which is the last part of the questionnaire. The GPA was used as the proxy of the last major construct, academic achievement.

On completion of the first draft of the questionnaire in English, the Thai version was prepared using back translations with decentering, to avoid cultural language barriers and avoidance of concentration on one language. The content validity of both versions was evaluated by four experts and changes made heeding to their suggestions. For the pilot testing a total of 100 questionnaires were pre-tested initially, 50 for Thai and 50 for foreign students. Revisions were made on comments from students regarding the item clarity, wording and length of the questionnaire. Next, the revised version of the questionnaire was pre-tested again. Another 120 sets of the questionnaires were distributed to 60 Thai students and 60 non-Thai students.

The revised questionnaires in bilingual languages were pre-tested and the Cronbach's Alpha Coefficient of both versions of the questionnaire, and item-to-total analysis together with the exploratory factor analysis was executed to verify the reliability of the measurement items. The Cronbach's Alpha coefficients for both English and Thai versions of cultural intelligence was 0.89, for socio-cultural adaptation was 0.90, for positive psychological adjustment was 0.79 and for negative psychological adjustment was 0.90, indicating sufficient reliability of all scales. Subsequently, the exploratory factor analysis (EFA), was performed to determine validity of the measurement items. All fifty-one measurement items were put in the EFA model; 20 items for cultural intelligence, 21 items for cultural adaptation, and 10 items for psychological adjustment. The Kaiser-Meyer-Olkin of significance at 0.931 (> cutoff point of 0.5) and Bartlett's Test of Sphericity ( $\chi^2=11688.950$ ;  $p<0.05$ ), indicated the adequacy of the pre-test sample data of 120 respondents. All twenty items of cultural intelligence were loaded with satisfactory results. Two items out of twenty-one for measuring cultural adjustment were not loaded in any dimensions, hence excluded in the final scale. All ten items for positive and negative psychological adjustment were loaded in the proposed dimensions with satisfactory results. All forty-nine measurement items were subjected to the CFA model. All 426 data sets indicated satisfactory results on five fit indices, i.e.  $\chi^2/df$ , IFI, TLI, CFI, and RMSEA, were used to determine the fit of the CFA.

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For determination of the sample size, the formula recommended by Zinkmund et al. (2013), was utilized, yielding a 95 % level of confidence resulting in a z score of 1.96. A total of 480 questionnaires were distributed; 120-set to each subgroup of Chinese, ASEAN and Thai students in Thai university and Thai students in an international university, using the quota sampling technique. 426 sets of data were ultimately analyzed.

Gender differences of the students are varied with 53.5 % female and 46.5 % male. The national makeup were Thai, composing of 52.8%, followed by Chinese composing of 23.7% while the rest were from the United States, Australia, Myanmar, Japanese, Vietnam, Singapore, Cambodia and other ASEAN countries, composing of 23.5% respectively. Students were further segregated on their experiences of living in a host country for longer than one or 2 years. 44.6% belonged to this category, while 55.4% were never exposed to other cultures, even for short lengths of time.

Initially, the descriptive data analysis measured the mean and standard deviation of the major constructs of all 426 data, i.e. cultural intelligence, socio-cultural adaptation and psychological adjustment as shown in Table 1. The verification of the reliability and validity of the data using Cronbach's Alpha coefficient and item-to-total as well as the exploratory factor analysis ensued. The data was subjected to Structural Equation Modeling (SEM) to examine the good fit of the model as well as to test hypothesis 1 and 2.

**Table 1** Descriptive statistics of students CQ, CA and GPA

Dimensions of CQ	Mean	SD	Minimum	Maximum
Strategic Cultural Intelligence	5.097	0.997	1.000	7.000
Knowledge Cultural Intelligence	4.614	1.007	1.600	7.000
Motivational Cultural Intelligence	5.039	1.061	1.800	7.000
Behavioral Culture Intelligence	4.865	1.011	1.000	7.000
Cultural Adaptation	3.727	0.528	2.150	5.000
Psychological Adjustment	4.161	1.168	1.00	7.000
GPA	2.770	0.523	1.25	4.000

## Results and discussion

Hypothesis 1, Cultural intelligence i.e. strategic CQ (a), knowledge CQ (b), motivational CQ (c) and behavioral CQ (d) are related to academic achievement, are not supported by the data since ( $\alpha = 0.003, 0.004, -0.076, 0.011$ ;  $p > 0.05$ ) are not significant as indicated in Table 2 below.

Hypothesis 2 was tested using the modification indices of the AMOS program. The relationship between cultural adaptation and psychological adjustment and academic achievement were added. A significant relationship between cultural adaptation and academic achievement was found ( $\alpha = 0.221$ ;  $p < 0.01$ ). Thus, the indirect relationship of the cultural intelligence on the academic achievement via socio-cultural adaptation was found as indicated in Table 2 below.

**Table 2** Estimated coefficients for structural paths

Structural Paths			Estimated Coefficient	Critical Value	R2
Strategic CQ	→	GPA	0.003 (0.006)	0.081	0.026
Knowledge CQ	→	GPA	0.004 (0.008)	0.110	
Motivation CQ	→	GPA	-0.076 (-0.155)	-1.858	
Behavioral CQ	→	GPA	0.011 (0.021)	0.278	
Socio-cultural Adaptation	→	GPA	0.221 (0.192)	2.606**	
Psychological Adjustment	→	GPA	-0.018 (-0.035)	-0.638	

**Remarks:** unstandardized is shown; standardized is presented in parentheses; Significance of the critical Ratio is shown as: \*\*\* $p < 0.001$ ; \*\*  $p < 0.01$ ; \*  $p < 0.05$ .

All dimensions of cultural intelligence i.e. strategic CQ (a), knowledge CQ (b), motivational CQ (c) and behavioral CQ (d) were not significantly related to academic performance. Academic performance in universities is frequently measured in terms of a Grade Point Average, and deals with qualitative and quantitative aspects of students' activities (Amor & Torres, 2016) and is often measured by tests of mathematics and science (Hanifi, 2010), assuming that higher scores assume higher cognitive ability which is not always flexible. Cultural intelligence has a correlation with intelligence (Gelfand et al., 2008), but is distantly different (Crowne, 2009). People need to possess some degree of intelligence to adapt to a culture owing to activities like information processing, recognition of patterns, relationship between factors and other factors that are salient (Earley & Ang, 2003; Gelfand et al., 2008) for interactions in diverse groups. Cultural intelligence is measured using a questionnaire and is a phenomenon which is pliable that can be acquired through cultural immersion, training and internal processing (Bhawu et al., 2008; Leung et al., 2014; Williams & Johnson, 2011). The literature review above elucidates a partial or moderate relationship between the dimensions of CQ and academic achievement. It is plausible that although a person's academic achievement is extraordinary, it cannot be inferred that adjustment to the new culture will be smooth since academic achievement is cognitive rather than contextual (Schmidt & Hunter, 2004). Association between interest and degrees of enjoyment in academic activities, may result in academic performance (Spinath et al., 2000), and a multitude of antecedents besides CQ may contribute to Grade Point Average.

A significant relationship between socio-cultural adaptation and academic achievement was detected, but not between psychological adjustment and academic achievement. The Socio-cultural Adaptation Scale (SCAS-R) proposed by Wilson (2013), measures extrinsic facets like, interpersonal communication, academic performance, personal interests and community involvement, ecological adaptation and language proficiency which allow adjustment on a daily basis effectively. In contrast the psychological adjustment scale proposed by Demes and Geeraert (2013), evaluates intrinsic experiences about the new culture like happiness, anxiety, loneliness and frustration in the new culture. Moreover, these two aspects of adaptation are distinct and need not always be correlated (Ward et al., 1998) and therefore

should be quantified independently (Motti-Stefanidi et al., 2008; Ward & Kennedy, 1996). The literature review states that CQ impacts CA as well as academic performance, although several studies are variegated. The present research shows no direct impact of CQ per se with academic performance rather than an indirect relationship between CQ on academic performance via cultural adaptation. Hence, CA can act as a mediator between CQ and academic performance. In a recent investigation by Mokhothu and Callaghan (2018), CA did not mediate the relationship between CQ and academic performance but motivational CQ has a direct and indirect association, through CA with student's performance.

Data on psychological adjustment was gathered in a Thai context, in which relationships are a priority, rather than academic performance. An international ranking in Thai culture, reiterated that happy students need to improve their grades (Bangkok Post, 2018). Although student's happiness is high in the new culture it does not imply that academic performance will be high. On the other hand, Socio-cultural adaptation, concerned with extrinsic daily living conditions displays a higher correlation with academic performance and are factors that can be controlled externally by the institution as prophesied by Crowne (2008) ; Phillion (2002), as well as by Mokhothu and Callaghan (2018). The findings of this study indicated the indirect relationship of CQ on academic achievement via socio-cultural adaptation which is consistent with some literature in a Thai context and internationally. The literature of the relationships of CQ, CA and academic performance is contradictory, owing to the fact that a proportion of studies show a direct relationship between all the dimensions of CQ and academic performance while others show just a single dimension of motivational CQ, can have a direct and indirect association through CA with student's academic performance and CA does not mediate the relationship between CQ and academic performance (Mokhothu & Callaghan, 2018). Khan et al. (2020), on the other hand asserted that CA is a significant mediator between CQ and academic performance. The intricacy of these relationships can be altered and often is contingent upon the situational context.

### **Conclusions and recommendations**

The substantial information provided in this quantitative research on CQ, CA and academic performance of students, must be interpreted with caution, in view of some limitations. The data, although sizable, was congregated from two educational institutions in a Thai context; hence conclusively it cannot be generalized to other cultures. The results on adaptation could be impacted on account of nearly half of the sample size being Thai, since they are familiar with their own culture.

Secondly, the data lacks quantitative measures, curtailing an in-depth idea of cultural intelligence in relation to the kind of society, (high and low context society), together with information about the age of exposure to the host culture or having one parent from the host culture. The validity and reliability of assessment instruments for data collection must need reassessment as they were used in a translated format for the Thai and International students studying in Thai culture. The instruments for data collection need reassessment as they were

used in a translated format for the Thai and International students studying in Thai culture, but not for Chinese and other nationalities.

Albeit these caveats, this seminal research does enumerate some factors responsible for student's progress and can facilitate educational institutions to disseminate information regarding the assimilation and acculturation of diverse students, so they can 'fit in' and achieve the intended goals academically. It is recommended that a further investigation be conducted of cultural intelligence with other variables like personality traits, language ability, length of stay in the host culture, having one parent belonging to the host culture, degree of culture shock, intercultural adjustment, communication anxiety and social difficulties, organization commitment, acculturation, work performance etc. According to the literature review cultural intelligence can be improved. Ergo, for holistic results, the research needs to shed light on the length of time it takes to develop CQ and accordingly develop orientation programs, cross-training programs and remedial programs for all sojourners, especially those who are more inclined to experience adjustment problems.

The implication is that all students may not flourish in a particular culture that is too different from their culture of origin. The dimensions of cultural adaptation like interpersonal communication, personal interests and community involvement, ecological adaptation and language proficiency can be ameliorated through formal and informal training programs. For a holistic result, the research needs to shed light on student and teacher retention, development of orientation programs, cross-training programs and remedial programs for all sojourners, especially those who are more inclined to experience adjustment problems.

## References

- Amor, V., & Torres, D. R. (2016). Working memory, fluid intelligence and academic attainment in school-age children. *International Journal of Psychophysiology*, 108(3), 15-33.
- Andrade, M. S. (2006). International students in English-speaking universities: Adjustment factors. *Journal of Research in International Education*, 5(2), 131-154.
- Ang, S., & Van Dyne, L. C. (2015). *Handbook of cultural intelligence*. New York: Sharpe.
- Ang, S., Van Dyne, L., Koh, C., Ng, K. Y., Templer, K. J., Tay, C., & Chandrasekar, N. A. (2007). Cultural intelligence: Its measurement and effects on cultural judgment and decision-making, cultural adaptation and task performance. *Management and Organization Review*, 3(3), 335-371.
- Bandura, A. (2002). Social cognitive theory in cultural context. *Applied Psychology: An International Review*, 51(2), 269-290.
- Bangkok Post. (2015). *AEC update: Outdated legislation hinders the free flow of labor*. Retrieved from <https://www.bangkokpost.com/business/590265/aec-update-outdated-legislation-hinders-the-free-flow-of-labour>
- Bangkok Post. (2018). *"Happy" university students still need to lift grades*. Retrieved from <https://www.bangkokpost.com/opinion/opinion/1415307/happy-uni-students-still-need-to-lift-grades>
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- Bhaskar, S. P., Harrison, D. A., Shaffer, M. A., & Luk, D. M. (2005). 'Input-based and time-based models of international adjustment: Meta-analytic evidence and theoretical extensions. *Academy of Management Journal*, 48(2), 257-281.
- Bhawuk, D. P., Sakuda, K. H., & Munusamy, V. P. (2008). *Intercultural competence development and triple-loop cultural learning* (pp.342-355). In Ang, S., & Van Dyne, L. (Eds.). *Handbook of Cultural Intelligence: Theory, Measurement, and Applications*. New York, NY: Routledge.
- Biernat, M. (1989), Motives and values to achieve: Different constructs with different effects. *Journal of Personality*, 57(1), 69-95.
- Black, J. S. (1988). Work role transitions: A study of American expatriate managers in Japan. *Journal of International Business Studies*, 19(2), 277-294.
- Black, J. S., & Gregersen, H. B. (1991a). Antecedents to cross-cultural adjustment for expatriates in Pacific Rim assignments. *Human Relations*, 44(5), 497-515.
- Black, J. S., & Gregersen, H. B. (1991b). The other half of the picture: Antecedents of spouse cross-cultural adjustment. *Journal of International Business Studies*, 22(3), 461-477.
- Black, J. S., & Stevens, G. K. (1989). The influence of the spouse on American expatriate adjustment and intent to stay in Pacific Rim overseas assignments. *Journal of Management*, 15(4), 529-544.
- Black, J. S., Morrison, A. J., & Gregersen, H. B. (1999). *Global explorers: The next generation of leaders*. New York, NY: Routledge.
- Brandt, A. (2022). *The key to success is often the ability to adapt*. Retrieved from <https://www.azquotes.com/quote/1343176>
- Brislin, R., Worthley, R. M., & Macnab, B. (2006). Cultural intelligence understanding behaviors that serve people's goals. *Group & Organization Management*, 31(1), 40-55.
- Brown, L. (2008). The incidence of study-related stress in international students in the initial stage of the international sojourn. *Journal of Studies in International Education*, 12(1), 5-28.
- Chen, A. S., Lin, Y., & Sawangpattanakul, A. (2011). The relationship between cultural intelligence and performance with the mediating effect of culture shock: a case from Philippine laborers in Taiwan. *International Journal of Intercultural Relations*, 35(2), 246-258.
- Chen, S. (2009). *A study of international students' life situation—A case study of the international students in University of Twente* (Master's thesis). The Netherlands: University of Twente, Enschede.
- Chirkov, V., Vansteenkiste, M., Tao, R., & Lynch, M. (2007). The role of self-determined motivation and goals for study abroad in the adaptation of international students. *International Journal of Intercultural Relations*, 31(2), 199-222.
- Country Report: Thailand. (2022). *Enhancing ASEAN Connectivity*. Retrieved from <https://asean.org/storage/2016/09/Master-Plan-on-ASEAN-Connectivity-20251.pdf>
- Crowne, K. A. (2008). What leads to cultural intelligence? *Business Horizons*, 51(5), 391-399.
-

- Crowne, K. A. (2009) The relationship among Social Intelligence, Emotional Intelligence and Cultural Intelligence. *Organization Management Journal*, 6(3), 178-163.
- Cushner, K., & Karim, A. U. (2004). Study abroad at the university level. *Handbook of Intercultural Training*, 3, 289-308.
- Daniel, S. (2021). *How many international students are in Thailand?* Retrieved from <http://www.heflatbkny.com/asia/how-many-international-students-are-there-in-thailand/>
- Deci, E. L., & Ryan, R. M. (1985). The general causality orientations scale: Self-determination in personality. *Journal of Research in Personality*, 19(2), 109-134.
- Demes, K. A., & Geeraert, N. (2014). Measures matter: Scales for adaptation, cultural distance, and acculturation orientation revisited. *Journal of Cross-Cultural Psychology*, 45(1), 91-109.
- Earley, P. C., & Ang, S. (2003). *Cultural intelligence*. Stanford, CA: Stanford University Press.
- Flavell, J. H. (1979). Metacognition and cognitive monitoring: A new area of cognitive developmental inquiry. *American Psychologist*, 34(10), 906-911.
- Gabel, R. S., Dolan, S. L., & Cerdin, J. L. (2005). Emotional intelligence as predictor of cultural adjustment for success in global assignments. *The Career Development International*, 10(5), 375-395.
- Gelfand, M. J., Erez, M., & Aycan, Z. (2007). Cross-cultural organizational behavior. *Annual Review of Psychology*, 58, 479-514.
- Gelfand, M. J., Imai, L., & Fehr, R. (2008). *Thinking intelligently about cultural intelligence: The road ahead* (pp.375-397). In: Ang, S., & Van Dyne, L. (Eds.). *Handbook of Cultural Intelligence: Theory, Measurement, and Applications*. New York, NY: Routledge.
- Glanz, L., & Van der Sluis, E. C. (2001). Employing organizations and expatriate spouses: Balancing self-knowledge and knowledge about options. *Career Development International*, 6(3), 169-175.
- Gudykunst, W. B., Ting-Toomey, S., & Chua, E. (1988). *Culture and interpersonal communication*. Newbury Park, Calif: Sage.
- Gunter, A., & Raghuram, P. (2018). International study in the global south: linking institutional, staff, student and knowledge mobilities. *Globalization, Societies and Education*, 16(2), 192-207.
- Hanafi, R. (2010). Spiritual Intelligence, Emotional Intelligence and Auditors Performance. *Jurnal Akuntansi*, 14(1), 29-40.
- Holmes, H., & Tangtongtavy, S. (2003). *Working with the Thais: A guide to managing in Thailand*. Bangkok, Thailand: White Lotus Press.
- Huff, K. C., Song, P., & Gresch, E. B. (2014). Cultural intelligence, personality, and cross-cultural adjustment: A study of expatriates in Japan. *International Journal of Intercultural Relations*, 38(5), 151-157.
-

- Isfahani, R. B. N., & Jooneghani, M. A. (2013). Analyzing the effects of cultural intelligence on employee performance in Azaran industrial group (Isfahan province). *International Journal of Academic Research in Business and Social Science*, 3, 363-376.
- Kanfer, R., & Heggestad, E. D. (1997). Motivational traits and skills: A person-centered approach to work motivation. *Research in Organizational Behavior*, 19, 1-56.
- Khan, K. Z., Wang, X. Q., Malik, S., & Ganiyu, S. A. (2020). Measuring the effects of emotional intelligence, cultural intelligence and cultural adjustment on the academic performance of international students. *Open Journal of Social Sciences*, 8(9), 16-38.
- Kodwani, A. E. (2012). Beyond emotional intelligence (EQ): The role of cultural intelligence (CQ) on cross-border assignment. *World Review of Business Research*, 2(4), 86-102.
- Kurpis, L. H., & Hunter, J. (2016). Developing students' cultural intelligence through an experiential learning activity: A cross-cultural consumer behavior interview. *Journal of Marketing Education*, 39(1), 30-46.
- Lee, L. Y., Veasna, S., & Wu, W. Y. (2013). The effects of social support and transformational leadership on expatriate adjustment and performance: The moderating roles of socialization experience and cultural intelligence. *Career Development International*, 18(4), 377-415.
- Leung, K., Ang, S., & Tan, M.L. (2014). 'Intercultural competence', *Annual Review of Organizational Psychology and Organizational Behavior*, 1(1), 489-519.
- Lin, J. C. G., & Yi, J. K. (1997). Asian international students' adjustment: Issues and program suggestions. *College Student Journal*, 31(4), 473-479.
- Lin, Y. C., Chen, A. S. Y., & Song, Y. C. (2012). Does your intelligence help to survive in a foreign jungle? The effects of cultural intelligence and emotional intelligence on cross-cultural adjustment. *International Journal of Intercultural Relations*, 36(4), 541-552.
- McClelland, D. C., Koestner, R., & Weinberger, J. (1989). How do self-attributed and implicit motives differ? *Psychological Review*, 96(4), 690-702.
- Mokhothu, T. M., & Callaghan, C.W. (2018). The management of the international student experience in the South African context: The role of sociocultural adaptation and cultural intelligence. *Acta Commer*, 18(1), 1-11.
- Moon, T. (2010). Emotional Intelligence Correlates of the Four-Factor Model of Cultural Intelligence. *Journal of Managerial Psychology*, 25(8), 876-898.
- Motti-Stefanidi, F., Pavlopoulos, V., Obradovic, J., Dalla, M., Takis, N., Papathanasiou, A., & Masten, A. (2008). Immigration as a Risk Factor for Adolescent Adaptation in Greek Urban Schools. *The European Journal of Developmental Psychology*, 5(2), 235-261.
- Ng, K.Y., & Earley, P.C. (2006). Culture + intelligence: Old constructs, new frontiers. *Group and Organization Management*, 31(1), 4-19.
- Office of the Higher Education Commission. (2019). *Higher education statistics*. Retrieved from <http://www.info.mua.go.th/info/>
- Phillion, J. (2002). Becoming a narrative inquirer in a multicultural landscape. *Journal of Curriculum Studies*, 34(5), 535-556.

- Pimpa, N. (2012). Amazing Thailand: Organizational culture in the Thai public sector. *International Business Research*, 5(11), 35-42.
- Poonpol, P. (2015). Cultural intelligence as an influential factor on cross-cultural adjustment and job performance among expatriates in Thailand. *Research Methodology & Cognitive Science*, 12(2), 109-121.
- Poonpol, P. (2017). The influence of personal, social and cultural factors on cross-cultural adjustment. *Journal of Behavioral Science*, 23(1), 105-121.
- Poyrazli, S., Arbona, C., Nora, A., McPherson, R., & Pisecco, S. (2002). Relation between assertiveness, academic self-efficacy, and psychosocial adjustment among international graduate students. *Journal of College Student Development*, 43(5), 632-642.
- Presbitero, A. (2016). It's not all about language ability: Motivational cultural intelligence matters in call center performance. *International Journal of Human Resource Management*, 28(11), 1547-1562.
- Reynolds, A. L., & Constantine, M. G. (2007). Cultural Adjustment Difficulties and Career Development of International College Students. *Journal of Career Assessment*, 15(3), 338-350.
- Rose, R. C., Ramalu, S. S., Uli, J., & Kumar, N. (2010). Expatriate performance in international assignments: The role of cultural intelligence as dynamic intercultural competency. *International Journal of Business and Management*, 5(8), 76-85.
- Schmidt, F. L., & Hunter, J. E. (2004). General mental ability in the world of work: occupational attainment and job performance. *Journal of Personality and Social Psychology*, 86, 162-174.
- Schreuders-van den Bergh, R., & Du Plessis, Y. (2016). Exploring the role of motivational cultural intelligence in SIE women's adjustment. *Journal of Global Mobility*, 4(2), 131-148.
- Seriwatana, P., & Charoensukmongkol, P. (2020). The Effect of Cultural Intelligence of Thai Cabin Crew in National Airlines Moderated by Job Tenure. *ABAC Journal*, 40(1), 1-19.
- SHARE: Policy Dialogue Webinar Series. (2021). *The 13th SHARE Policy Dialogue: 23 - 25 Nov 2021*. Retrieved from <https://share-asean.eu/news/13th-share-policy-dialogue-asean-eu-continue-support-enhance-graduate-employability-asean?>
- Spinath, B., Spinath, F. M., Harlaar, N., & Plomin, R. (2006). Predicting school achievement from general cognitive ability, self-perceived ability, and intrinsic value. *Intelligence*, 34(4), 363-374.
- Thamarat, J., & Arthittiya, S. (2021). Relationship between Cultural intelligence and self-adjustment of expatriates in the airline industry. *Journal of Community Development Research (Humanities and Social Sciences)*, Naresuan University, 14(3).18-30.
- Thapatiwong, A. (2011). *An empirical analysis of national culture and performance-related pay in multinational and local companies in Thailand* (Doctoral dissertations). Cardiff: Cardiff University.
-

- Thomas, D. C., & Inkson, K. (2004). *Cultural intelligence: People skills for global business*. San Francisco, CA: Berrett-Koehler.
- Torbiorn, I. (1982). *Living abroad: Personal adjustment and personnel policy in the overseas setting*. New York: Wiley.
- Tourism Authority of Thailand. (2015). *International public relations division*. Retrieved from <http://www.tatnews.org/four-thai-cities-ranked-top-100-destinations/>
- Triandis, H. C. (1994). *Culture and Social Behavior*. New York: McGraw-Hill.
- Vailati, F. (2014). *How does culture affect leadership? Case study Thailand*. (Doctoral dissertations). Kalmar, Sweden: Linnaeus University.
- Vedadi, A., Kheiri, B., & Abbasalizadeh, M. (2010). The relationship between cultural intelligence and achievement: A case study in an Iranian company. *Iranian Journal of Management Studies*, 3(1), 25-40.
- Wang, Y., & Zhang, J. (2021). Examining the Relationship between Cultural Intelligence and the Academic Performance of International Students: A Structural Equation Modeling Analysis. *SCIREA, Journal of Sociology*, 5(1), 25-52.
- Ward, C. M., & Kennedy, A. (1999). The measurement of sociocultural adaptation. *International Journal of Intercultural Relations*, 23(4), 659-677.
- Ward, C., & Kennedy, A. (1996). *Crossing cultures: The relationship between psychological and sociocultural dimensions of cross-cultural adjustment* (pp. 289-306). In Pandey, J., Sinha, D., & Bhawuk, D. P. S. (Eds.). *Asian Contributions to Cross-Cultural Psychology*. Thousand Oaks, California: Sage.
- Ward, C., Okura, Y., Kennedy, A., & Kojima, T. (1998). The U-curve on trial: A longitudinal study of psychological and sociocultural adjustment during cross-cultural transition. *International Journal of Intercultural Relations*, 22(3), 277-291.
- Ward, C., Wilson, J., & Fischer, R. (2011). Assessing the predictive validity of cultural intelligence over time. *Personality and Individual Differences*, 51(2), 138-142.
- Williams, C. T., & Johnson, L. R. (2011). Why can't we be friends? Multicultural attitudes and friendships with international students. *International Journal of Intercultural Relations*, 35(1), 41-48.
- Wilson, J. (2013). *Exploring the Past, present and future of cultural competency research: the revision and expansion of the sociocultural adaptation construct* (Doctoral dissertations). Wellington City, New Zealand: Victoria University.
- Yang, R. P. J., Noels, K. A., & Saumure, K. D. (2006). Multiple routes to cross-cultural adaptation for international students: Mapping the paths between self-construal's, English language confidence, and adjustment. *International Journal of Intercultural Relations*, 30(4), 487-506.
- Yoo, S. H., Matsumoto, D., & LeRoux, J. A. (2006). The Influence of Emotion Recognition and Emotion Regulation on Intercultural Adjustment. *International Journal of Intercultural Relations*, 30, 345-363.
- Zikmund, W., Babin, B., Carr, J., & Griffin, M. (2013). *Business research methods* (9<sup>th</sup> eds.). Boston, Massachusetts, United States: South Western-Cengage Learning.
-