

STUDENT ACCULTURATION JOURNEY: CULTURAL INTELLIGENCE AND ACCULTURATION AMONG MALAYSIAN STUDENTS IN FRANCE

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ABSTRACT

The understanding of cultural intelligence in France is significant to develop deep comprehension and appreciation of the French language, enabling effective cross-cultural communication and engagement in the French-speaking world. Despite existing studies in cultural intelligence development little is known about Malaysian-French cultural adaptation and acculturation. In response to this gap, this research elaborates on the development of Malaysian-French cultural intelligence and explores the changes in the acculturation process for acquiring cultural intelligence among Malaysian students in France. A total of 60 Malaysian students completed the 39 items E-CQS (Extended Cultural Intelligence Scale). Results showed that the stay enhanced high motivational CQ along with metacognitive CQ, cognitive CQ, and behavioural CQ. There was a significant correlation between language proficiency and student CQ. However, there was no correlation between students' period of residency in France and cultural intelligence level. Interestingly, participants demonstrated the highest CQ score in the dataset resided in France for a short duration. The findings of this study have shown the importance of the positive acculturation journey of Malaysian students in demonstrating an excellent level of CQ, as supported by findings indicating that the quality of exposure to diverse cultural environments is more influential than the duration of residency in the host country.

Keywords: Cultural Intelligence, CQ, Cultural, Acculturation, and Malaysian-French

INTRODUCTION

The word culture is derived from the Latin term 'cultura' which refers to the way of life, the general customs and beliefs of a particular community of people at a particular time¹. From art to food, culture influences our thoughts and holds a group of people together and sets them apart from other groups. As explained by Earley, P.C and Ang, S 2003, define cultural intelligence is "a person's capability for successful adaptation to new cultural settings, that is, for unfamiliar settings attributable to cultural context."². Cultural Intelligence commonly known as Cultural Quotient (CQ) was derived from IQ. Individual with high CQ level are not considered excellent in all kinds of cultures. Instead, these individuals have the ability to fully understand and explore an unfamiliar environment with confidence. In this age of globalization,

¹ <https://dictionary.cambridge.org/dictionary/english/culture>

² P. Christopher Earley and Soon Ang, *Cultural Intelligence: Individual Interactions Across Cultures* (Stanford University Press, 2003).

elements such as language, racial and cultural identity, including stereotypes and prejudices, are often primary contributors to cross-cultural connections. Therefore, we see cultural intelligence based on the theory of intelligent adaptation to new cultural settings and competence to engage effectively in complex cross-cultural scenarios.

Studying abroad considerably enhances students' personal growth, cross-cultural competence, and academic performance (Stone & Petrick, 2013) which could be described as cultural intelligence. Cultural intelligence or cultural adaptation is an important issue for many educators and student support organizations. While research has been conducted on the challenges of cultural intelligence (e.g. Egitim & Akaliyski, 2024; Sterten et al., 2016; Nematollahi et al., 2022) acknowledge the impact of cultural intelligence (e.g. Arli et al., 2023; Li et al., 2023; Lam et al., 2022; Imai & Gelfand, 2010; Nguyen et al., 2018) and the experiences on the journey towards cultural intelligence (e.g. A. Li et al., 2023; Wei et al., 2022; Pidduck et al., 2022; Merklen & Wolfe, 2020), little attention has been given to the development of Malaysian-French cultural intelligence and more particularly, the changes in the process of cultural intelligence.

This research contributes to the literature on cultural intelligence (CQ) by utilizing a newly contributing dataset on Malaysian-French culture. We take a more dynamic approach of questionnaire to the study of cultural intelligence and look at the confidence and persistence in Malaysian students' multicultural interactions along with cross-cultural adaptation across the French culture. We adapted the theory of CQ conceptualized as a four-factor model including metacognitive, cognitive, motivational, and behavioural (Van Dyne et al., 2012) and adapted it as a framework in order to comprehend the cultural intelligence of Malaysian students pursuing in France. The majority of CQ theory and empirical study concentrated on the four factors of CQ and utilized the 20-item Cultural Intelligence Scale (CQS) (Van Dyne et al., 2012).

In terms of specific socio-cultural domains, the importance of cultural convergence and divergence including acknowledgment of the complexities and nuances of cultural norms have been demonstrated over several decades. Multiple aspects of positive acculturation enhanced cultural intelligence elements including cognitive, metacognitive, behavioural, and motivational, the influence of cultural distance and previous travel experience, as well as empowering graduates to develop skills that applicable in the international work environment have been explored (McKay et al., 2022a). A substantial body of literature also suggests that individuals with a monocultural background and those with a multicultural background exhibited different levels of cultural intelligence in the beginning and after their study abroad experiences (Nguyen et al., 2018; Korzilius et al., 2017). In addition to cultural intelligence, other research has shown positive outcomes for migrant workers with strong career adaptability as they tend to have better general adjustment, which positively enhances their work performance, job retention, and psychological well-being. Additionally, this positive impact is more pronounced for migrants with high cultural intelligence (Ocampo et al., 2022; Merklen & Wolfe, 2020).

Against this backdrop, we aimed to address three specific concerns in the research. First, is the need to elaborate on the development of cultural intelligence among Malaysian students who currently pursue academics in France; second is the need to explore the changes in the acculturation process for acquiring cultural intelligence exhibited by Malaysian students and third is the need to comprehend cultural intelligence (CQ) of Malaysian students abroad. The utilization of these measures allowed us to develop a better-defined conceptual framework for each of the four dimensions of CQ which enhances future research by providing a deeper understanding of each dimension's conceptualization (Van Dyne et al., 2012). In this way, we attempt to understand various elements in acculturation interaction processes that contribute to individual cultural intelligence levels among Malaysian students living in France.

LITERATURE REVIEW

Culture, Cultural Intelligence, and Cultural Quotient (CQ)

In 1952, American anthropologists Kroeber and Kluckhohn identified and gathered 164 definitions of culture diverse academic fields, such as history, philosophy, anthropology, sociology, and psychology. Over many decades, culture remained as the exclusive domain of the humanities and social sciences, in which context research and comparison of the various cultural aspects are conducted by anthropologists, historians, linguists, sociologists, and other scholars (Cecilia Heyes, 2020). A cultural concept that has attracted tremendous attention was established by Earley, P. Christopher, (2003), cultural intelligence or commonly referred as cultural intelligence (CQ) conceptualized as a facet of intelligence (Ott & Michailova, 2017).

Prior research suggests that the significance of international experiences in cultivating intercultural competencies essential for navigating global contexts, suggesting that longer durations abroad lead to greater gains in the development of cultural intelligence (CQ) (McKay et al., 2022). For example, studies have shown studying abroad or exchange students' experiences has a significant positive effect on the improvement of cultural intelligence in behavioural, cognitive, metacognitive, and motivational (Chédru & Ostapchuk, 2023; McKay et al., 2022). Moreover, recent work has found support for short-term study abroad programs can lead to an increase in self-efficacy and cultural intelligence for students, particularly for monocultural individuals (Nguyen et al., 2018). However, contradictory findings regarding the moderating effect of cultural intelligence and certain variables such as academic adaptation (AA) and intercultural communication apprehension (ICA) were not found to be significant. There were mixed results on the predictive power of CQ because some students are prone to possess ICA and AA regardless of their CQ levels (Lee & Hwang, 2024; Xiaoying et al., 2023). Hence, international experiences influence the enhancement of cultural intelligence, negative results exist regarding cultural intelligence and other variables.

Previous study have emphasized the importance of career adaptability and cultural intelligence in facilitating successful adaptation, improving job performance, retention, and life satisfaction (Ocampo et al., 2022). For instance, the importance of high levels of cultural intelligence in diverse work environments enhances the indirect effects of career adaptability on work (Korzilius et al., 2017; Masrek et al., 2021; Ocampo et al., 2022). Furthermore, recent evidence suggests that the level of cultural intelligence is found to influence the relationship between career adaptability and individual's intentions to pursue expatriate careers (Presbitero & Quita, 2017). On the contrary, the variability and complexity of the interactions between cross-cultural training, job performance, and cultural intelligence indicate that the effects may not be effectively constant across all contexts and outcomes (Chenyang, 2022). Collectively, these study outline the critical role of individual cultural intelligence and career adaptability in developing a high-quality workplace, thereby contributing to a positive work environment and productive atmosphere.

As previously reported in the literature completed in four Asia-Pacific countries (Taiwan, Philippines, Indonesia, and Vietnam), teachers' multicultural experience, creative teaching, and the mediating role of cultural intelligence reveal significant differences among these countries, potentially due to factors such as cultural diversity (Wei et al., 2022). To illustrate, strong evidence was found that diverse exposure to multicultural experiences and interactions positively impacts individuals' multicultural identity and cultural intelligence. For instance, teachers' cultural intelligence is important to enhance creative teaching in culturally diverse environments (Nguyen et al., 2018; Pidduck et al., 2022; Wei et al., 2022). However, conducted research amongst minority of teacher, exhibit that a moderate level of cultural

intelligence (10.3%), while only one teacher exhibit a low level of cultural intelligence (0.9%) (Petrović, 2011). This indicates that while the majority of teachers possess a high level of CQ, certain teachers still could not demonstrate adequate cultural intelligence, which could negatively impact their effectiveness in comprehending and teaching students within diverse cultural and ethnic backgrounds. In view of all that has been mentioned so far it is crucial to developing cultural intelligence among educators to providing a strong foundation in societies where the maintenance of cultural diversity in education is prioritized.

Acculturation and Adaptation.

In 1880, the term acculturation was coined by John Weasley Powell, a pioneer in the developing field of anthropology³. Acculturation is generally defined by Robert Redfield in 1936 as the changes that occur when communities of individuals encounter a new culture. While, cultural adaptation referred to adapting to different aspects of everyday life, understanding cultural flexibility behaviours, and developing necessary social skills for positive intercultural interactions with local communities (Ward & Kennedy, 1999). According to Berry (1997), an individual must comprehend and adjust in accordance with society's demands when encountering a new cultural setting filled with diverse unfamiliar practices, and norms.

A recent study have revealed that a strong Chinese national identity and Mandarin language proficiency in cultural adaptation and academic performance are crucial for positive social, academic, and psychological adaptation of Macao students study in Mainland China (Lou, 2021). For example, the strongest predictor for both academic and socio-cultural adaptation is linguistic confidence, language training, and cultural understanding, thus concurrently contributing to the enhancement of the acculturation experience for students (Lou, 2021; Yu & Shen, 2012). Despite this, the reality was found in a study done with the international students attending a university in the Netherlands and results showed only a minority of participants indicating high proficiency in Dutch. This deficiency of host language knowledge could be attributed to the participation with the expatriate group which enables interaction with culturally different people without requiring proficiency in the host language (Taušová et al., 2019). Moreover, there's a study among refugee youth and non-refugee immigrant youth in Australia found an approximately similar result, where non-refugee immigrant youth proficient in English facilitated their adaptation yet refugee youth showed a different trend where they encountered difficulties in fully blending into the host community (Buchanan et al., 2018). Hence, the influential factor contributing to a successful acculturation process can be identified as linguistic proficiency, which significantly impacts adaptation in both psychological and socio-cultural domains.

According to the previous research on the acculturation journey of young Muslims in European contexts discovered the impact of discrimination, existential quest, and religious identity as they balance their heritage culture, mainstream culture, and religious beliefs (Rizzo et al., 2022). To illustrate, research study indicate that when Muslims are depicted as maintaining their religious culture, trust decreases among majority-group members. Conversely, when Muslims are portrayed as adopting mainstream British culture, trust increases and support for surveillance of Muslims decreases (Tahir et al., 2023). Another recent study among Malaysian Muslim students studying abroad in Australia, the United States of America, South Korea, India, Jordan, and the United Kingdom indicated that these students encounter a significant acculturation challenges which impact their lifestyle as a Muslim student including in maintaining their Islamic identity (Akhwan et al., 2021). According to Akhwan et al. (2021), close-minded attitudes from some individuals in the host country contributed to respondents

³ <https://www.newworldencyclopedia.org/entry/Acculturation>

encountering negative treatment, including a reluctance to reveal their Islamic identity and upholding Islamic practices such as prayer. Moreover, in Canada, negative stereotypes towards Arab Muslims emerged, particularly among Quebec Francophone undergraduates who held negative attitudes about the niqab compared to Western fashion, nun clothing, and the hijab (El-Geledi & Bourhis, 2012). Nevertheless, the acculturation process is still possible among Muslim immigrants because they may engage with the host culture while maintaining their religious identity, leading to a rich cultural exchange, including the opportunity to share their traditions, practices, and perspectives with others, which contributes to intercultural understanding and diversity (Gattino et al., 2016). Thus, the components of religious factors on acculturation experiences indicate the need for further research into the complexities of cultural adaptation in diverse cultural contexts.

The literature suggests acculturation strategies including marginalization, separation, assimilation, and integration influenced individual life satisfaction including other factors such as gender, national identity, self-esteem, resilience, etc (Yoo, 2021). Further evidence showed that immigrants who demonstrated an integrated acculturation strategy were evaluated with greater favorability compared to separated and assimilated immigrants (Flores et al., 2022; Montgomery et al., 2021). Immigrants who preferred integration strategies expressed stronger psychological and acculturative well-being (Montgomery et al., 2021). Furthermore, research conducted in Malaysia identified that the acculturation strategy commonly employed by both Western and Asian immigrants is integration (Fadil et al., 2022). According to Fadil et al.(2022), immigrants who employed this strategy intentionally aim to integrate their cultural identities with Malaysian culture as evidenced in the study that integration effectively contribute to a harmonious coexistence and mutual respect between immigrants and local community. Contrastingly, marginalization employed as an acculturation strategy was associated with the worst effect on mental health in migrant populations with contributing factors including lower levels of host language proficiency, low education, and ethnicity (Choy et al., 2021). In summary, acknowledging and applying appropriate acculturation strategies significantly influences individuals' adaptation to other cultures.

An important gap that still remains in this growing body of research, however, is the somewhat limited scope on which existing findings are based in that the vast majority of studies to date have been carried out predominantly on international students encompassing both undergraduates and exchange students from Australia, North Africa, Romania, Turkey, Iceland and the United States of America in France, (McKay et al., 2022; Barrette et al., 2004; Nguyen et al., 2018; Brancu et al., 2022; Chédru & Ostapchuk, 2023). A paucity of research exists, examining a clear picture of cultural intelligence in individuals affecting the assimilation of host country culture and the acculturation process in various Asian nations such as Japan and mainland China (Huff et al., 2014; Xiaoying et al., 2023; Lou, 2021; Akhal & Liu, 2019). Exceptions include related research in Indonesia (Masrek et al., 2021) and four Asia-Pacific countries including Taiwan, Vietnam, Philippines, and Indonesia (Wei et al., 2022) where the former reported that the four-factor model, meta-cognitive, cognitive, motivational, and behavioural identified as the important factors affecting job performance and this research highlighted the significant of cultural intelligence in strengthening job performance. Wei et al.(2022), found in their study revealed that the correlation between teachers' multicultural experience and creative teaching was significant in Indonesia and insignificant in Vietnam compared to Taiwan and the Philippines.

HYPOTHESES

This study included two main goals: to elaborate on the development of Malaysian-French cultural intelligence and to explore changes in the acculturation process for acquiring cultural intelligence among Malaysian students in France. Based on prior research, the cultural intelligence (CQ) level of students was predicted to enhance significantly following their study abroad experience, and longer duration abroad was expected to demonstrate a strong trajectory of intercultural competence leading to a significant and positive acculturation process. Research suggests that students' experiences abroad contribute to their interest in other cultures (Norris & Gillespie, 2009). Because prior research has varied regarding the relationship between participants' CQ levels and adjustments in the cultural intelligence process, it is unknown whether or not these two components will be related.

METHOD

Participants

With the Malaysian Student's Association in France (MASAF) assistance, we distributed the questionnaire to approximately 100 Malaysian students in France. However, we only succeeded in recruiting 60 respondents through snowball sampling (Coleman, 1958; Leo A. Goodman, 1961). Snowball sampling method was selected in recruiting respondents due to the challenges in directly identifying and contacting each participants. Hence, this method facilitates in reach the target population by requesting existing respondents to disseminate the questionnaire or to connect with other participants. The entirety of the participants we recruited are university students who have experienced student life in France, including undergraduate students, graduate students, or exchange students. Of this sample, 2% were exchange students, 18% were graduate students, and the remaining 80% were students currently studying in France. Most CQ research frequently selects university students as the research participants which is widely regarded as appropriate (Ott & Michailova, 2018). They were enrolled in numerous university and academic institution across France, such as Université de Franche-Comté, Grenoble Ecole de Management, SKEMA Business School, École nationale d'ingénieurs de Metz, IÉSEG School of Management & etc. Moreover, the majority of respondents (46%) were residents of France for 2-3 years, while 24% had resided for more than three years. Among these participants, 46% were male and 54% female. They had an average age of 21-23 years old. Within this set of participants, the race and ethnicity revealed that the majority of participants (84%) identified as Malay, while 6% identified as Chinese, 4% as Indian, and the remaining 6% belonged to other ethnic groups. Consent was obtained from respondents through the detail explanation about the objectives of the study and involvement requirement. Participation was voluntary and confidentiality was assured through the use of pseudonyms

Data Collection

Prior to data collection, we employed a descriptive strategy developed by Tragon Corporation in 1974 (Stone et al., 2004) to collect our quantitative data. The descriptive research is a fundamental research approach method investigating the current state of a situation (Williams, 2007). We chose this descriptive approach since it appropriately illustrates the current state or phenomena relating to the acculturation process of Malaysian students. Furthermore, to actualize the study, the corresponding author initially emailed the Cultural Intelligence Center for permission to use the 11 items in the Expanded Cultural Intelligence Scale (E-CQS). Interestingly, Van Dyne provided the most recent edition of the questionnaire (39-item E-CQS,

2021). Questions asked in the items are mainly focused on the Four Factor Model of CQ - metacognitive CQ, cognitive CQ, motivational CQ, and behavioural CQ. In December 2023, Malaysian Students were recruited by phone through email, and social media via the Malaysian Students Association In France (MASAF). In January 2024, they were invited to fill out a survey questionnaire (E-CQS) through an online platform (Google Forms). The questionnaire briefly took 5-10 minutes to complete.

Measures

All respondents completed the 39-item Expanded Cultural Intelligence Scale (E-CQS) developed by Van Dyne et al. (2021). This scale includes nine items for the motivational CQ (e.g., "I thrive on experiencing cultural differences that are new to me"), twelve items for the cognitive CQ (e.g., "I can describe different views of beauty and aesthetics across different cultures"), nine items for the metacognitive CQ (e.g., "I carefully adjust my cultural knowledge after a cultural misunderstanding") and nine items for behavioural CQ (e.g., "I modify the way I disagree with others to fit the cultural setting"). Answers were recorded on a 7-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree). The total score is calculated by summing and averaging all items for every factor. The greater scores indicated higher CQ levels in the relevant factor. A higher score on CQ suggested a higher tendency to employ an intercultural ability (Brancu et al., 2022).

Data Analysis

The dataset was analysed using IBM SPSS Statistics for Windows version 29 and AMOS 29. In this study, the overall Cronbach alpha CQ scale had high reliability ($\alpha = 0.958$), followed with four-dimensional: Motivational CQ ($\alpha = 0.90$), Cognitive CQ ($\alpha = 0.93$), Meta-cognitive CQ ($\alpha = 0.90$), and Behavioural CQ ($\alpha = 0.90$). Cronbach's alpha is a statistic frequently quoted to demonstrate that tests and scales that have been developed or adapted are fit for the purpose (Taber, 2018). Alpha values were defined as excellent, 0.93–0.94, strong 0.91–0.93, reliable 0.84–0.90, &, etc (Taber. K. S, 2017). Prior to delving further into analysing our data, a Kaiser-Meyer-Olkin (KMO) test was done to determine whether the sampling was adequate for factor analysis. The result indicates that the sampling is sufficient (see Table 1). According to Kaiser (1974) proposed 0.5 (value for KMO) as a minimum (barely accepted), values between 0.7-0.8 are acceptable, and values above 0.9 are excellent. Moreover, confirmatory factor analysis (CFA) was employed to verify the dimensionality of the 39 CQ items. Specifying a model fit of nine meta-cognitive items, twelve cognitive items, nine motivational items, and nine behavioural items.

Table 1: KMO and Bartlett's Test

KMO and Bartlett's Test	
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.742
Bartlett's Test of Sphericity	Approx. Chi-Square
	2177.541
df	741
Sig.	<.001

RESULTS

Confirmatory Factor Analysis of E-CQ Scale

Confirmatory factor analyses conducted with AMOS (Arbuckle, 2009) were employed to test the factor structure of the E-CQS. Evaluation of model-data fit included the following fit indices: chi-square (χ^2), normed of fit index (NFI), comparative fit index (CFI), parsimony normed fit index (PNFI), standardized root mean square residual (SRMR), root mean square error of approximation (RMSEA), and Akaike's information criterion (Model AIC).

Table 2 presents the results of the CFAs of the four-factor model. Considering the fit statistics, the other indicators were in an acceptable range while some of the scores exceeded the recommended number. For example, the NFI value was 0.572 and below the acceptable range of 0.95, the PNFI value was 0.521 and below 0.80, the CFI value was 0.732 and below the acceptable range as well and the RMSEA value was 0.123 and slightly above the acceptable range 0.10. However, a good model fit can be achieved if the sample size of participants is sufficiently large.

Table 2: Model Fit Indices for Four-Factor Model

Model Fit Indices	Four-Factor Model (Metacognitive CQ + Cognitive CQ + Motivational CQ + Behavioural CQ)
<i>N</i>	60
χ^2	966.596***
<i>Df</i>	511
χ^2/df	1.892
<i>NFI</i>	0.572
<i>CFI</i>	0.732
<i>PNFI</i>	0.521
<i>SRMR</i>	0.1163
<i>RMSEA</i>	0.123
<i>Model AIC</i>	1134.596

Assessing CQ through studying abroad

Table 3 presents the means and standard deviations for E-CQS scores of Malaysian students based on gender. The present study indicates that Malaysian students in France demonstrate a higher level of E-CQS score for the four-factor model. As predicted, students' cultural intelligence evolves and develops significantly following their study abroad experience. Studying abroad correlates with high mean CQ levels in the four dimensions of cultural intelligence (Merklen & Wolfe, 2020). This can be seen in the total average scores across all dimensions of E-CQS exceeding 5.00 (1-7 scale). According to Sternberg et al., 2021 greater total scores indicate greater measured of CQ. The results were significant with the mean scores for Motivational CQ (5.40), Cognitive CQ (5.15), Metacognitive CQ (5.40), and Behavioural CQ (5.05). From the data, it is apparent that students demonstrate the highest proficiency in motivational CQ and metacognitive CQ among other factors. Moreover, this case reveals that among three sub-dimensions from the motivational CQ (planning, awareness, and checking), the sub-dimension checking exhibits the highest mean score (5.61). Checking involves the individual ability to analyse intercultural interactions by comparing the expectations and reality events (Van Dyne et al., 2012). In the support for motivational CQ, extrinsic interest had the highest mean score (5.54) compared to other sub-dimensions including Intrinsic interest and self-efficacy to adjust. Extrinsic Interest defined as the experience to diverse cultural environments contributes significantly in recognizing the valuable personal benefits gained from the exposure (Ryan & Deci, 2000).

Table 3: Means and standard deviations for E-CQ scores of Four-Factor Model

Four-Factor Model (1-7 scale)												
	N	Motivational CQ			Cognitive CQ		Metacognitive CQ			Behavioural CQ		
		Int. I.	Ext. I.	S-e A.	C-g K.	C.s K.	Pl.	Aw.	Ch.	Sp. A.	V. B.	N-v. B.
		M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)
Men	2	4.87	5.18	5.24	5.23	4.80	4.86	5.39	5.45	4.97	4.74	4.74
	8	(1.30)	(1.26)	(1.36)	(1.13)	(1.35)	(1.30)	(1.18)	(1.20)	(1.27)	(1.40)	(1.44)
Female	3	5.68	5.90	5.53	5.58	4.96	5.05	5.80	5.76	5.10	5.24	5.49
	2	(1.33)	(1.22)	(1.15)	(1.39)	(1.67)	(1.64)	(1.42)	(1.26)	(1.61)	(1.69)	(1.65)
Total	6	5.28	5.54	5.39	5.41	4.88	4.96	5.60	5.61	5.04	4.99	5.12
	0	(1.32)	(1.24)	(1.26)	(1.26)	(1.51)	(1.47)	(1.30)	(1.23)	(1.44)	(1.55)	(1.55)

Note: Pl. = Planning; Aw. = Awareness; Ch. = Checking; C-g K. = Culture-general knowledge; C-s K. = Context-specific knowledge; Int. I. = Intrinsic interest; Ext. I. = Extrinsic interest; S-e A. = Self-efficacy to adjust, V. B. = Verbal behaviour; N-v. B. = Non-verbal behaviour, Sp. A. = Speech acts

Additionally, with the aim of exploring further into the development of students' cultural intelligence and the contributing factors, the Pearson correlation coefficient (PCC) was conducted between E-CQS score, race & ethnicity, French language proficiency, and duration of stay in France (Table 4). Pearson correlation coefficient is a test that measures the correlation between two continuous variables. The Pearson correlation method is widely used for numerical variables assigning a value within the range of -1 and 1. A correlation coefficient of 1 defined a total positive correlation, -1 defined a negative correlation and 0 indicates no correlation (David Nettleton, 2014). The Pearson correlation between two objects, with paired attributes is

calculates by summing the product of their differences from their object means, and dividing the sum by the product of the squared differences from the object means (Fig. 1) (Jules J. Berman, 2016). As table 4 shows that E-CQS had a moderate correlation with the language proficiency level possessed by students ($r(60) = .356$, $p < 0.05$). Participants with beginner language proficiency levels often exhibit low adaptability in diverse cultural environments due to the insecurity to communicate in the host country language. Moreover, race & ethnicity were weakly correlated with students' E-CQS scores, $r(60) = .095$, $p < .471$. Interestingly the most surprising correlation is between duration of stay in France and E-CQS score. From the correlation analysis, there was a negative correlation between the two variables ($r(60) = -.004$, $p < .974$). Overall, students who resided longer in the host country did not determine an excellent level of cultural intelligence. However, the duration of stay is associated with their language proficiency over time ($r(60) = .398$, $p < .002$).

Furthermore, contrary to our hypotheses, the highest E-CQS score in the dataset was 6.97 out of 7.00, exhibited by a first-year student who resided in France for a short duration (6 months- 1 year). While the lowest E-CQS score was 2.95 out of 7.0, exhibited by a second-year student who resided in France for a longer duration (1 year – 2 years). Both of these students were female and demonstrated advanced proficiency in the French language. Interestingly, despite possessing the same proficiency level in the French language, the primary difference between these students is their race and ethnic background. The first-year student identifies as Indian ages 18-20 while the second-year student is Malay ages between 21-23.

Table 4: Pearson Correlation Coefficient

Variables		E-CQS Score	Language Proficiency	Duration of Stay	Race & Ethnicity
E-CQS Score	Pearson Correlation	1			
	Sig. (2-tailed)				
	N	60			
Language Proficiency	Pearson Correlation	.356**	1		
	Sig. (2-tailed)	.005			
	N	60	60		
Duration of Stay	Pearson Correlation	-.004	.398**	1	
	Sig. (2-tailed)	.974	.002		
	N	60	60	60	
Race & Ethnicity	Pearson Correlation	.095	.116	-.049	1
	Sig. (2-tailed)	.471	.379	.712	
	N	60	60	60	60

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

$$\frac{\sum(x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum(x_i - \bar{x})^2} \sqrt{\sum(y_i - \bar{y})^2}}$$

Figure 1 Pearson Correlation Coefficient Formula

DISCUSSION

Using a refined theoretical conceptualization of CQ, our aim was to strengthen the development of CQ and the capabilities of students to engage effectively within Malaysia-French cross-cultural environments. Within the scope of this study, the cultural intelligence level of Malaysian students studying in France was measured based on the four factors of CQ, metacognitive CQ, cognitive CQ, motivational CQ, and behavioural CQ. Despite previous research made on the development of cultural intelligence among students, to our knowledge, this is the first study that reports on Malaysian-French cultural intelligence, contributing to positive outcomes in intercultural contexts within both Malaysia and France.

Furthermore, our study empirically validated the relationship between CQ, host country language proficiency, religious and racial identity, international experiences while studying abroad, and multicultural interactions. Previous empirical research on CQ, host country language proficiency, religious and racial identity, international experiences, and multicultural interactions were primarily conducted among students and teachers (Barrette et al., 2004; Chédru & Ostapchuk, 2023; El-Geledi & Bourhis, 2012; Lou, 2021; Marco Rizzo, S. Gattino et al., 2022; Nguyen et al., 2018; Pidduck et al., 2022; Tahir et al., 2023; Wei et al., 2022; Yu & Shen, 2012). Apart from some notable exceptions (Brancu et al., 2022; Chédru & Ostapchuk, 2023; McKay et al., 2022; Merklen & Wolfe, 2020), the roles of host country residency duration, multicultural interactions, and language proficiency of the host country's language have not yet been investigated among Malaysian students in France, especially in terms of CQ.

In the sample, the results indicated that Malaysian students studying in France demonstrated an excellent development of CQ in metacognitive aspects which was influenced by their cross-cultural interactions and experiences including sub-dimensions of metacognitive CQ, planning, awareness, and checking. These results elaborate on the awareness of the students in comprehending different cultures when interacting with people from diverse cultures. This is in line with previous studies in the context of navigating individuals to understand the significant role of metacognitive CQ in enhancing essential skills for global citizenship and effective cross-cultural interactions as well as the ability to recognize international opportunities (Cheung et al., 2022; Lorenz et al., 2018). Nevertheless, research conducted in the Netherlands investigating the role of international classroom composition revealed findings that the amount of international students in the classroom had a strong correlation only with motivational CQ but not with metacognitive CQ (Grosch et al., 2023). Malaysian students demonstrated high metacognitive CQ probably due to the multicultural norms in Malaysia, which expose them to the practice of multiculturalism. This exposure contributes to a tendency to practice an acculturation strategy of integration as they actively plan and prepare to engage in intercultural interactions while maintaining their own cultural identity. According to Soubra et al.(2024), multicultural individuals who are exposed to diverse cultures frequently exhibit a higher tendency to practice integration strategies.

The results also indicated that students didn't practice behavioural flexibility appropriate to the host country's culture. As evidenced in the sample, the behavioural factor including the sub-dimensions verbal-behaviour, non-verbal behaviour, and speech acts is comparatively lower compared with other factors. This finding aligns with McKay et al.(2022), which revealed that behavioural factors were the least exhibited by respondents compared to other facets of CQ, where only a small linear increase in this factor indicated that students did not experience a significant rise in behavioural CQ. Moreover, other prior research investigating the cultural intelligence of chemical engineering students exhibited a mean score for the behavioural dimension of 4.63 out of 7.00 (Beneroso & Alosaimi, 2020) which was lower than the average of our sample 5.05. However, these results differ from previous study which revealed that the behavioural dimension represented the highest dimension exhibited by

the respondents (Azinuddin et al., 2024). According to Barbuto et al., (2015) and Dolce et al., (2023), the behavioural CQ of an individual is positively associated with self-monitoring and public self-consciousness, which involves the ability to adjust interaction strategies and implement new behaviours in new cultural environments. Students who possessed high self-monitoring skills are better at interpreting new social environment and able to adapt their behaviour to fit into different cultural settings. Meanwhile, students with high public self-consciousness might be more mindful of their behaviour to ensuring they meet cultural norms and expectations. A possible explanation for this might be due to the religious differences between Malaysia and France, with Malaysia identified as a predominantly Muslim country and France a secular country with no official religion yet a significant Christian population. These religious differences are attributed to a behaviour of cultural practice gap between the two countries, as evidenced in France's *la bise* culture which is uncommon in Malaysia. Religion plays a crucial role in the success of the acculturation process, as Muslims often tend to disengage from mainstream society and maintaining their culture heritage (S. Gattino et al., 2022;

Moreover, the research highlighted the proficiency level in the French language affected CQ of Malaysian students. The level of language proficiency encompasses levels from beginner, intermediate, fluent, and advanced. These aspects explain how fluency in communicating in the host-country language determines a significant acculturation journey for Malaysian students in France. These results are in concurrence with the findings of Presbitero (2020) and Yeke & Semerciöz (2016), which stated that language proficiency allows individuals to enhance team communication leading to improved cultural intelligence, as individuals proficient in a language are often more comfortable navigating diverse cultural settings. Furthermore, a study conducted with an immigrant mother and her daughter in Hong Kong revealed that language proficiency in the dominant language of the host society significantly influences the acculturation process (Gu & Lai, 2019). According to Gu & Lai (2019), the daughter possesses a higher language proficiency in the dominant language due to her educational experience and societal interaction in Hong Kong exhibiting capabilities to communicate effectively and engage with diverse cultural settings. This contrasts with the mother who encountered challenges in the acculturation process due to language proficiency influenced by her immigration experiences and limited societal interaction. The observed correlation between language proficiency and CQ level might be explained by the linguistic confidence or language anxiety experienced by students. For instance, language anxiety is attributed to individuals preventing social interaction and participation in society due to the lack of confidence in communicating in the host country's language. Moreover, the study highlighted that proficiency in the French language affected CQ among Malaysian students, suggesting that language anxiety or linguistic confidence may impact CQ levels. (S. Gattino et al., 2022; Terzuolo, 2018)

Contrary to our expectation this study did not find a significant correlation between the period of residency in the host country and students' CQ levels. A longer duration of study abroad in France does not emerge as a factor of positive Malaysian-French acculturation. Are there any other existing internal factors within students that influence Malaysian students' CQ level? These results are in concurrence with Chang et al., (2022) and Terzuolo (2018), suggesting that even shorter durations abroad can significantly improve individual intercultural competence, as other studies revealed students in a three-week program develop a greater level of metacognitive CQ compared with students in a six-week program. In contrast to prior research, the duration of studying abroad has a significant impact on CQ, indicating that a longer duration of studying abroad enhances cross-cultural development including cognitive, metacognitive, motivational, and behavioural (Behrnd & Porzelt, 2012; Merklen et al., 2023; Pasztor, 2021). According to Pasztor (2021), participation in a language school abroad for a

minimum of 2 months demonstrates higher CQ scores than those who did not participate in the programs. Moreover, Bhardwaj (2022) revealed that professionals who experience cross-cultural situations during short-term foreign trips showed development in Metacognitive CQ, Motivational CQ, and Cognitive CQ except for Behavioural CQ. Several possible explanations for this result are the existence of internal factors and the quality of exposure to diverse cultural environments. The internal factors within Malaysian students studying in France may include their racial identity, as there is potential for Indian and Chinese students have already encountered the cross-cultural interactions between Malay culture and their ethnic culture. The development of cross-cultural competencies is linked to individuals' previous experiences with multiculturalism (Nguyen et al., 2018). Moreover, the quality of exposure to diverse cultural environments is more influential than the duration of residency in France. Cultural exposure to diverse norms, values, and communication positively influences individuals' cultural intelligence (Crowne, 2013; Ott & Michailova, 2017).

CONCLUSION

To conclude the research, our study successfully achieved the objectives. The development of Malaysia-French Cultural Intelligence has successfully elaborated that Malaysian students in France exhibit a high level of Cultural Intelligence across the four dimensions of CQ. The highest dimension possessed by Malaysian students is Motivational CQ (5.40), followed by Metacognitive CQ (5.39), Cognitive CQ (5.15) and the lowest is Behavioural CQ (5.05). Furthermore, this study has successfully observed the significant changes in the acculturation process and cultural intelligence acquisition during the period of residency in France, particularly when students are actively engaged with diverse cross-cultural environments.

Moreover, several important limitations of this study need to be considered. Firstly, the limitation is the sample size was relatively medium for quantitative research on cultural intelligence. According to Delıce (2001), the sample size is particularly important when employing data analysis methods. These medium sample sizes are the factor for the limitations in achieving a good model fit despite a sufficient number of KMO tests. It is recommended, that future research should aim to recruit a bigger number of participants for a large sample size. A significant number of participants can be recruited by conducting research among southeast Asian students or Malaysian citizens residing in France. The large sample size is beneficial for quantitative research as it will provide more accurate results and less margin of error.

Secondly, these findings are limited by the use of a cross-sectional study considering the duration to conduct this research is generally one year. This research design limits the ability to accurately examine the development of students' cultural intelligence over time. Therefore, a future study could assess the longitudinal study to explore a detailed view of Malaysian students' CQ level. The data should be collected several times to identify changes in metacognitive CQ, cognitive CQ, motivational CQ, and behavioural CQ including to determine whether culture exposure events are related to this development. Based on Bala (2020), longitudinal research design repeatedly measures the same variables in the same procedures for the same group of cases at each wave of data collection.

Thirdly, another considerable limitation is this study predominantly relies only on the quantitative methodology which potentially limits a deeper exploration of participants' experience and journey in cross-cultural interactions. Thus, it is recommended that future research should utilize a mixed-method approach. The interviews conducted with participants will enrich the results and possibility to bring new insights. In comparison to the quantitative method alone, the data analysis is limited within the questionnaire, however, the combination

of qualitative allows for further discussion into other aspects such as the acculturation strategies employed by Malaysian students in France. The mixed-method approach provided comprehensive explorations of the correlation between study-abroad experiences and cultural intelligence development (Dolce et al., 2023)

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