# Three Dimensions of Cultural Intelligence and Expatriates Performance: Evidence from the Construction Industry

## Deng Ying

Professional Development and Continuing Education, Faculty of Educational Studies, Universiti Putra Malaysia, 43400 UPM Serdang, Selangor, Malaysia
Email: gs60610@student.upm.edu.my

## Mohd Ashraff Mohd Anuar

Professional Development and Continuing Education, Faculty of Educational Studies, Universiti Putra Malaysia, 43400 UPM Serdang, Selangor, Malaysia
Email: mohdashraf@upm.edu.my

## Nurul Afiqah Zulkifly

Department of Professional Development and Continuing Education, Faculty of Educational Studies, Universiti Putra Malaysia, 43400 UPM Serdang, Selangor, Malaysia
Email: nurulafiqah@upm.edu.my

**Abstract**
With the growing number of Chinese expatriates in the construction industry, understanding the factors affecting their job performance, particularly the roles of cultural intelligence (CQ), is crucial. This study investigates how CQ dimensions—cultural knowledge, cross-cultural skills, and cultural metacognition—predict job performance among expatriates in the Chinese construction industry. Grounded in the Conservation of Resources (COR) theory, the study employs a cross-sectional design and snowball sampling to data to collect data from 235 Chinese expatriates in Malaysia. The findings reveal that all three CQ dimensions significantly enhance job performance, with cultural metacognition demonstrating the strongest impact. However, this study has several limitations, including its industry-specific and geographically focused sample, reliance on self-reported data, and the constraints of a cross-sectional design. Future research should adopt longitudinal approaches to validate these findings. Practically, organizations are encouraged to integrate CQ training into their HR strategies, with a particular emphasis on developing cultural knowledge and metacognition to improve expatriate performance in cross-cultural environments.

**Introduction**

With the advancement of China's "Belt and Road" initiative, Chinese construction companies have significantly increased their participation in international projects, leading to a surge in expatriate assignments (Alaeldin et al., 2024). This global expansion has not only extended the reach of Chinese construction firms but also created unique career opportunities for professionals. However, when expatriates are deployed to culturally diverse environments, they encounter significant challenges in cross-cultural adjustment, which in turn places greater demands on their job performance (Caligiuri, 2000).

Job performance is a cornerstone of operational efficiency and competitiveness, particularly in international assignments where expatriates' success directly influences project outcomes (Viswesvaran & Ones, 2017). Despite the importance of expatriate performance, it remains a significant challenge. DeNisi & Sonesh (2016) reported failure rates for expatriate assignments ranging from 16% to 40%, depending on the host country. In the case of Chinese expatriates, approximately 22.15% return to their home country ahead of schedule, primarily due to challenges in cross-cultural adjustment(Hao, 2023). These early repatriations not only result in increased labor costs but also disrupt project timelines, posing significant risks to organizational efficiency. Moreover, even among expatriates who fulfill their assignments, job performance frequently falls below expectations. This highlights an urgent need to address cross-cultural adjustment issues to enhance both individual and organizational success in international assignments.

In cross-cultural environment, cultural intelligence (CQ) has emerged as a pivotal predictor of job performance (Setti et al., 2022). CQ refers to an individual's capability to function effectively in culturally diverse settings and comprises multiple dimensions. While the four-dimensional CQ model (metacognitive, cognitive, motivational, and behavioral CQ) proposed by Earley & Ang (2003) has been extensively studied across various industries, establishing its robustness in predicting job performance. However, Thomas et al. (2008) introduced a more streamlined three-dimensional model (cultural knowledge, cross-cultural skills, and metacognition) that has received limited empirical testing(Chedru & Ostapchuk, 2023). Moreover, while prior studies predominantly adopt Earley & Ang's (2003) four-dimensional CQ model, its conceptual overlap (e.g., motivational CQ with personality traits) limits predictive clarity (Thomas et al., 2008). Few studies address the construction industry (Henderson et al., 2018), and none integrate the streamlined three-dimensional model (cultural knowledge, skills, and metacognition) with COR theory to explain how CQ functions as a dynamic resource in high-stress environments. This study fills these gaps by empirically validating Thomas's model and proposing a novel COR-based mechanism for CQ's impact on performance.

This study aims to answer one main research question: (1) how do the three dimensions of CQ-cultural knowledge, cross-cultural skills, and cultural metacognition-influence expatriate job performance in the construction industry? Conservation of Resources (COR) theory provides the theoretical foundation for this investigation. COR theory posits that individuals strive to protect and accumulate valuable resources to cope with challenging environments

(Hobfoll, 2002). In cross-cultural settings, CQ functions as a key resource, enabling expatriates to enhance performance.

This study contributes to the understanding of cultural intelligence (CQ) by empirically testing Thomas's three-dimensional model within the construction sector, an area that has been largely overlooked in past research. It demonstrating that metacognition drives performance through resource gain spirals—a mechanism absent in prior four-dimensional studies. The findings reveal that cultural metacognition plays a critical role in predicting expatriate job performance, highlighting its importance in navigating complex cultural environments. These insights not only address gaps in the literature but also provide a foundation for future research in cross-cultural human resource management, particularly in understudied industries such as construction.

From a practical perspective, this research offers valuable recommendations for HR practitioners in the construction industry. It emphasizes the need for tailored CQ training programs, with a particular focus on developing metacognitive skills. Such training can help expatriates better adapt to cultural differences, improve their performance, and reduce the likelihood of early repatriations. By enhancing expatriates' ability to manage cross-cultural challenges, these strategies can contribute to the success of international projects and provide a useful framework for managing expatriates, especially for Chinese construction companies operating in Southeast Asia.

## Literature Review and Hypotheses Development
### Expatriate Job Performance

Expatriate job performance is a multidimensional concept that extends beyond traditional task achievements. It encompasses the ability to adapt to cultural differences, manage cross-cultural challenges, and build effective relationships in diverse environments (Setti et al., 2022). Unlike traditional performance metrics, expatriate job performance is influenced by how well individuals can navigate cultural nuances, communicate across cultural boundaries, and integrate into local cultural practice(Fang-Yi Lo & Thi Hong Anh Nguyen, 2023). Specifically, expatriate performance includes task performance (completing job-related tasks), contextual performance (team collaboration and organizational citizenship behavior), and expatriate-specific performance (cross-cultural adjustment and communication) (Caligiuri, 1997).

Among the critical determinants of expatriate performance, cross-cultural adjustment and communication skills have been identified as particularly significant(Wawrosz & Jurásek, 2023). Cross-cultural adjustment, which includes work adjustment, social adjustment, and psychological adjustment, is a key predictor of expatriate success(Black & Gregersen, 1999). For instance, (Alaeldin et al., 2024; Fang-Yi Lo & Thi Hong Anh Nguyen, 2023; Huang et al., 2020) found that cross-cultural adjustment significantly enhances job performance, especially in high cultural distance environments. Cultural intelligence facilitates cross-cultural adjustment, which in turn improves performance outcomes (Guang & Charoensukmongkol, 2022; Setti et al., 2022).

Moreover, CQ directly influences job performance by enabling expatriates to resolve cross-cultural conflicts, build trust, and enhance team collaboration (Earley & Ang, 2003). Jyoti &

Kour (2015) found that all four dimensions of CQ positively correlate with job performance, with behavioral CQ having the strongest impact on task performance.

In the construction industry, expatriates face unique challenges such as long project cycles, complex work environments, and frequent cross-cultural teamwork (Henderson et al., 2018). These challenges highlight the importance of CQ in enabling expatriates to navigate cultural differences and perform effectively. For instance, Henderson et al. (2018) emphasized that successful cross-cultural teamwork in construction projects requires high levels of cultural sensitivity and adaptability, which are facilitated by CQ.

*Cultural Intelligence (CQ)*
Cultural Intelligence (CQ), introduced by Earley (2002), refers to an individual's ability to adapt to culturally diverse environments. In 2003, Earley and Ang further refined this concept, defining CQ as "the ability to effectively adapt to cultural diversity." This definition has since been widely used in empirical studies to explore CQ's relationship with cross-cultural adjustment and job performance(Ott & Michailova, 2018)

CQ is typically measured using a four-dimensional model proposed by Earley & Ang (2003), which includes cognitive CQ, motivational CQ, behavioral CQ, and cultural metacognition. These dimensions capture the knowledge, motivation, actions, and self-awareness necessary for individuals to function effectively in multicultural settings. This four-dimensional model has become a cornerstone in CQ research and has been extensively applied to examine how CQ influences expatriate job performance across various industries(Ang et al., 2007).

However, the four-dimensional model has faced criticism for its conceptual ambiguity. Thomas et al. (2008) argued that motivational CQ should not be an independent dimension, as it overlaps with other constructs as personality traits and general motivation. They also noted that the model lacked theoretical clarity in distinguishing between its dimensions. In response, Thomas et al. (2008) proposed a streamlined three-dimensional model, emphasizing CQ as an intelligence system that enables individuals to process cultural information, solve problems, and adapt to diverse environments. This model categorizes CQ into cultural knowledge, cross-cultural skills, and cultural metacognition, offering a more focused framework for understanding CQ in practice (Thomas et al., 2015).

Despite its theoretical contributions, Thomas's three-dimensional model has been rarely tested in empirical studies. Critically, it addresses limitations of Earley & Ang's (2003) four-dimensional framework by eliminating motivational CQ (redundant with general motivation constructs) and refocusing on actionable dimensions (knowledge, skills, and metacognition). However, existing studies fail to examine whether this parsimonious model better predicts performance in industries like construction, where rapid cultural problem-solving is essential. Our study bridges this gap while uniquely positioning CQ as a COR-defined resource.

By focusing on cultural knowledge, cross-cultural skills, and cultural metacognition, this study aims to provide a more nuanced understanding of how CQ influences expatriate performance in complex, multicultural environments. The findings are expected to contribute to both theoretical advancements in CQ research and practical strategies for managing expatriates in the construction industry.

### Relationship between CQ and Job Performance

Cultural Intelligence (CQ) is a critical factor in enhancing expatriate job performance, particularly in multicultural environments. Higher CQ enables expatriates to navigate cultural challenges and adapt effectively, leading to better performance outcomes (Ang et al., 2019; Jyoti & Kour, 2015; Nam & Park, 2019). However, the impact of CQ on job performance varies across its dimensions, often mediated by cross-cultural adjustmemt (Collins et al., 2016; Lee & Sukoco, 2010).

This study adopts Thomas's three-dimensional model of CQ, which includes cultural knowledge, cross-cultural skills, and cultural metacognition(Thomas et al., 2015). These dimensions collectively equip expatriates with the cognitive, behavioral, and metacognitive tools needed to succeed in cross-cultural environments. The following sections briefly review each dimension and present the corresponding hypotheses.

### Cultural Knowledge

Cultural knowledge refers to a systematic understanding of cultural norms and structures, helps expatriates interpret and adapt to cultural differences (Thomas & Inkson, 2017). Studies confirm that cognitive CQ, which incorporates cultural knowledge, positively influences job performance by enhancing understanding and problem-solving abilities (Lorenz et al., 2018). Based on this, the following hypothesis is proposed:

*Hypothesis 1:* Cultural knowledge positively impacts the job performance of expatriates in the construction industry working in Malaysia.

### Cross-Cultural Skills

Cross-cultural skills encompass the ability to act appropriately in cross-cultural contexts, including perceptual, relational, and adaptive skills (Thomas & Inkson.,2017). These skills align with behavioral CQ and have been shown to improve interpersonal effectiveness and task performance in diverse settings (Ang et al., 2007; Sri Ramalu, 2012).

*Hypothesis 2*: Cross-cultural skills positively impact the job performance of expatriates in the construction industry in Malaysia.

### Cultural Metacognition

Cultural metacognition involves the ability to plan, monitor, and adjust cultural interactions, enabling expatriates to integrate cultural knowledge and skills effectively(Ang et al., 2007; Thomas & Inkson, 2017). Research consistently highlights its strong predictive role in job performance, particularly in complex cultural environments(Lorenz et al., 2018)

*Hypothesis 3:* Cultural metacognition positively impacts the job performance of expatriates in the construction industry in Malaysia.

### Conservation of Resource Theory

The conservation of resources (COR) theory, proposed by Hobfoll (1989), explores how individuals manage resources to affect job performance. According to this theory, resources are categorized into four types:

1. Objective resources (e.g., property and tangible assets),
2. Conditional resources (e.g., status and experience),
3. Personal trait resources (e.g., skills and intelligence),
4. Energy resources (e.g., knowledge and reputation)

In this study, Cultural knowledge functions as a conditional resource (e.g., understanding local construction safety norms) that reduces environmental uncertainty (Hobfoll, 2002). Cross-cultural skills represent personal trait resources (e.g., adaptive communication abilities) that conserve emotional energy during intercultural interactions (Chen et al., 2024). Cultural metacognition serves as energy resources (e.g., capacity for continuous learning through self-reflection) that generate resource gain spirals (Hobfoll et al., 2018). Expatriates use these resources to mitigate challenges and maintain performance levels (Hobfoll, 2002).

*Resource Gain Spirals*
Hobfoll et al. (2018) expanded this theory with the concept of resource gain spirals, suggesting that individuals with more initial resources are better positioned to acquire additional resources, creating a reinforcing cycle of resource accumulation. These spirals enable individuals to foster innovative behavior(Nazir et al., 2019), enhance job satisfaction(Côté et al., 2021; Wen et al., 2019), and improved job effectiveness(Kawai & Strange, 2014). In cross-cultural settings, individuals with high cultural intelligence are more likely to access resource gain spirals, adapt to cultural differences, and continuously acquire resources that enhance their job performance(Chen et al., 2024).

*Resource Conservation Strategies*
Conversely, COR theory also emphasizes resource conservation strategies, when individuals facing limited resources may adopt defensive approaches to prevent further resource loss, such as reducing effort or withdrawing from challenging tasks (Hobfoll et al., 2018). Conversely, individuals with sufficient resources tend to take proactive actions, leveraging their resources to adapt and perform effectively (Hobfoll, 1989).

This theoretical framework provides a basis for understanding how CQ enables expatriates to adapt to cross-cultural environments, and achieve superior job performance. It also highlighting the importance of resource availability in determining job outcomes, particularly in multicultural settings where resource management is critical for success.
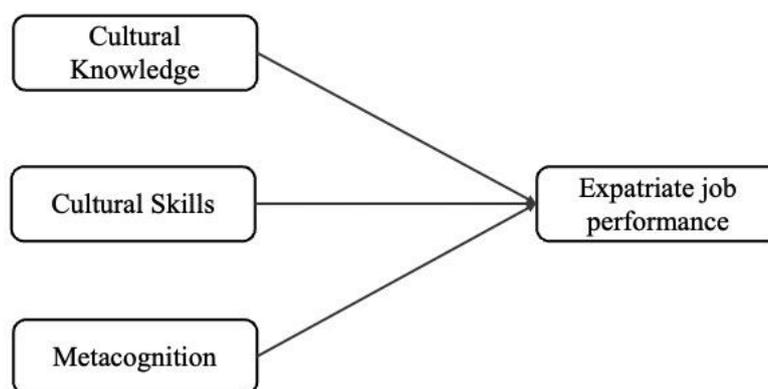


Figure 1: Proposed model of the relationship between CQ Dimensions and Expatirate job performance.
The Figure 1 illustrates the predictive effect of CQ's three dimensions on the job performance of expatriates. Next, this study will explore this relationship through quantitative research and analysis, using expatriates working in the construction industry in Malaysia as a sample.

## Method

### Participants and Procedure

This study employed a questionnaire survey method to explore the hypothesized relationships, following established research practices (Lages et al., 2020). A convenience sampling approach was utilized due to the challenges of accessing a comprehensive list of Chinese expatriates working in the construction industry.

Participants were selected based on their accessibility and willingness to participate. The research team initially contacted project managers from a Chinese multinational construction enterprise through their professional network. These individuals then helped distribute the questionnaires to eligible expatriates within their organizations.

A total of 235 valid responses were collected, which is sufficient for hypothesis testing (Xue et al., 2020). While convenience sampling is a practical method for reaching hard-to-access populations, it may introduce selection bias. To minimize this limitation, the researchers ensured diversity in participants' roles, experience levels, and professional backgrounds, thereby improving the representativeness of the sample.

### Questionnaire Development

The questionnaire used in this study consisted of two main sections. The first section collects demographic information from participants, including their age, gender, education and position. The second section measures the independent, dependent, and moderating variables based on validated scales from previous research.

Cultural intelligence (CQ) was measured using the Short form of Cultural Intelligence Scale which captures three dimensions: cultural knowledge (item 1-2), cross-cultural skills (item 3-7), and metacognition (item 8-10). This scale consists of 10 items, providing a comprehensive assessment of individuals' cultural intelligence.

Job Performance was assessed using a 13-item scale specifically developed for expatriates by Caligiuri (1997). This scale includes items measuring overall job performance, technical performance, contextual performance, and expatriate-specific performance, reflecting the multidimensional nature of expatriate job roles.

All variables were measured using established scales validated in previous research. CQ and job performance were scored using a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). These scales were chosen for their reliability, validity, and alignment with the study's conceptual framework.

### Statistic Technique

This study utilized multiple regression analysis in SPSS version 29 to examine the proposed relationships in the conceptual model. Multiple regression analysis was conducted to evaluate the direct effects of the dimensions of cultural intelligence (CQ) on expatriate job performance. The analysis included data cleaning, assumption testing, multicollinearity check and model testing.These techniques are widely recognized for their suitability in hypothesis testing and for exploring complex interaction effects in social science research(J. Hair, 2009).

**Result**

The demographic characteristics of the sample are summarized in Table 1. The majority of participants were male (90.6%) and aged 31-40 (44.7%), with smaller proportions in other age groups. Most participants held a bachelor's degree (51.5%), while others had master's degrees (28.9%) or other qualifications. In terms of marital status, 88.5% of participants were married.

The sample was diverse in professional roles: 38.7% were in management, 35.7% were technical personnel, and 23% were engineers. These demographic data provide valuable context for interpreting the study's findings.

Table 1
*Respondent's Profile (n=235)*

| Demographic Factors | | Frequency | Percent |
|---|---|---|---|
| Sex | Male | 213 | 90.6 |
| | Female | 22 | 9.4 |
| Age | 20-30 | 34 | 14.5 |
| | 31-40 | 105 | 44.7 |
| | 41-50 | 68 | 28.9 |
| | 51-60 | 28 | 11.9 |
| Academic Qualification | Bachelor | 121 | 51.5 |
| | Master | 68 | 28.9 |
| | Doctorate | 6 | 2.6 |
| | Other | 40 | 17 |
| Position | Management | 91 | 38.7 |
| | Engineering | 54 | 23 |
| | Technicist | 84 | 35.7 |
| | Others | 6 | 2.6 |

**Preliminary Analysis**

*Reliability and Validity Analysis*

The reliability and validity of the questionnaire were rigorously assessed using SPSS Version 29 to ensure its suitability for hypothesis testing.

*Reliability Analysis*

The internal consistency of the questionnaire was evaluated using Cronbach's alpha. According to Hair et al. (2019), a Cronbach's alpha value above 0.7 indicates acceptable reliability. In this study, all scales achieved Cronbach's alpha values exceeding 0.7, confirming their internal consistency (see Table 2). Specifically, the Cronbach's alpha value for cultural

knowledge, cross-cultural skills and cultural metacognition are 0.744, 0.870 and 0.793, respectively. The Cronbach's alpha value for job performance is 0.943.

*Validity Analysis*
The structural validity of the questionnaire was assessed through exploratory factor analysis (EFA). The Kaiser-Meyer-Olkin (KMO) value exceeded 0.9, and Bartlett's Test of Sphericity was significant ($p < 0.001$), indicating the data's suitability for factor analysis (Hair et al., 2020). All item factor loadings were greater than 0.5, with average variance extracted (AVE) values exceeding 0.5 and composite reliability (CR) values above 0.7 (see Table 2). Specifically, the average variance extracted (AVE) and composite reliability (CR) values for the constructs were as follows: cultural knowledge (AVE = 0.617, CR = 0.852), cross-cultural skills (AVE = 0.570, CR = 0.868), cultural metacognition (AVE = 0.557, CR = 0.920), and job performance (AVE = 0.550, CR = 0.965). These results indicate that all constructs demonstrate acceptable convergent validity and composite reliability, meeting the recommended thresholds for further analysis. These results confirm the questionnaire's acceptable convergent validity and composite reliability.

*Multicollinearity Check*
Correlation analysis revealed that none of the variables had correlations exceeding 0.9 (see Table 3), eliminating concerns about multicollinearity among the study variables. Additionally, the variance inflation factor (VIF) values for the independent variables were all below the acceptable threshold of 5 (Hair et al., 2020), as shown in Table 4. Specifically, the variance inflation factor (VIF) values for the constructs were as follows: cultural knowledge (VIF = 1.33), cross-cultural skills (VIF = 1.29), and cultural metacognition (VIF = 1.20). All VIF values were well below the threshold of 5, indicating no significant multicollinearity issues among the study variables. These results further confirm that multicollinearity is not a significant issue in this study.

**Summary**
In summary, the reliability and validity of the scales used in this study meet the required standards. The results indicate that the measurements are robust and can be used for subsequent multiple regression analysis.

Table 2
*Factor loading, composite reliability and average variance extracted*

|  | Items | Factor loading | Composite Reliability | Average variance | Cronbach's Alpha |
|---|---|---|---|---|---|
| Job performance | JP1 | 0.731 | 0.965 | 0.550 | 0.943 |
|  | JP2 | 0.753 |  |  |  |
|  | JP3 | 0.721 |  |  |  |
|  | JP4 | 0.702 |  |  |  |
|  | JP5 | 0.744 |  |  |  |
|  | JP6 | 0.705 |  |  |  |
|  | JP7 | 0.787 |  |  |  |
|  | JP8 | 0.760 |  |  |  |
|  | JP9 | 0.706 |  |  |  |
|  | JP10 | 0.775 |  |  |  |
|  | JP11 | 0.717 |  |  |  |
|  | JP12 | 0.748 |  |  |  |
|  | JP13 | 0.787 |  |  |  |
| Cultural knowledge | CQ1 | 0.791 | 0.852 | 0.617 | 0.744 |
|  | CQ2 | 0.780 |  |  |  |
| Cross-cultural skills | CQ3 | 0.702 | 0.868 | 0.570 | 0.870 |
|  | CQ4 | 0.749 |  |  |  |
|  | CQ5 | 0.768 |  |  |  |
|  | CQ6 | 0.733 |  |  |  |
|  | CQ7 | 0.819 |  |  |  |
| Metacognition | CQ8 | 0.761 | 0.920 | 0.557 | 0.793 |
|  | CQ9 | 0.730 |  |  |  |
|  | CQ10 | 0.748 |  |  |  |
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy |  |  |  | KMO=0.953 |  |
| Bartlett's Test of Sphericity |  |  | p<.001, | $x^2$=8050.8 |  |

Table 3
*Pearson's correlation coefficients*

| Variables | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 1.Job Performance | n.a | | | | |
| 2.Cultural Knowledge | .445** | n.a | | | |
| 3.Cross-cultural skills | .456** | .442** | n.a | | |
| 4.Metacognition | .481** | .373** | .328** | n.a | |

Note(s): ** Correlation is significant at the 0.01 level (2-tailed); n.a.= not applicable

Table 4
*Path Analysis*

| Hypotheses | Standardized Beta | Std. Error | t-value | VIF | Tolerance | p-value. | Results | $R^2$ (Model) |
|---|---|---|---|---|---|---|---|---|
| H1 | 0.212 | 0.057 | 3.492 | 1.33 | 0.747 | <.001 | Supported | M1 0.198 |
| H2 | 0.259 | 0.056 | 4.342 | 1.29 | 0.774 | <.001 | Supported | M2 0.282 |
| H3 | 0.317 | 0.054 | 5.508 | 1.20 | 0.828 | <.001 | Supported | M3 0.365 |

Notes: Standardized Beta (β): Standardized regression coefficients.

Std. Error: Standard error of the regression coefficients.
VIF: Variance Inflation Factor (threshold < 5 indicates no multicollinearity).
Tolerance: Tolerance value (threshold > 0.2 indicates no multicollinearity).
p-value: Significance level (p < 0.001 indicates high statistical significance).
$R^2$ (Model): R-squared values for Model 1 (M1), Model 2 (M2), and Model 3 (M3).
M1: Cultural knowledge and job performance.
M2: Cultural knowledge, Cross-Cultural skill and job performance.
M3: Cultural knowledge, Cross-Cultural skill, cultural metacognition and job performance.

*Multiple Regression Analysis*
Multiple regression analysis was conducted to evaluate the direct effects of the dimensions of cultural intelligence (CQ) on job performance. The results demonstrate that the research model has good explanatory power (see Table 4). The $R^2$ value for Model 3 is 0.365, indicating that 36.5% of the variance in job performance is explained by the independent variables included in the model.

Specifically, Cultural knowledge has a positive and significant impact on job performance (β=0.212, t=3.492, P<0.001), supporting Hypothesis 1. Additionally, cross-cultural skills have a significant and positive effect on job performance (β=0.259, t=4.342, P<0.001), supporting Hypothesis 2. Furthermore, there is a significant and positive relationship between cultural metacognition and job performance (β=0.317, t=5.508, P<0.001).

These results strongly support H1, H2, and H3, highlighting the importance of all three dimensions of cultural intelligence—cultural knowledge, skills, and metacognition—in

predicting job performance. The findings underscore the multidimensional nature of CQ and its critical role in enhancing expatriates' effectiveness in cross-cultural environments.

**Discuss**

This study, grounded in Conservation of Resources (COR) theory, explores the impact of cultural intelligence (CQ) on expatriate job performance in multinational construction firms. The findings provide critical insights into cross-cultural management practical and the theoretical underpinnings of Cultural intelligence.

The study confirms that cultural intelligence, comprising cultural knowledge, cross-cultural skills, and cultural metacognition, significantly predicts expatriate job performance. Expatriates with high cultural knowledge are better equipped to understand the differences between the host country and the home country, understand deep-seated cultural factors, improve their adaptation in cross-cultural environment, and further enhance their job performance. This finding is consistent with Demerouti et al., (2019); and Lorenz et al., (2018), who found that cognitive CQ promotes job performance.

Cross-cultural skills also have a significant positive impact on job performance. consistent with Hypothesis 2. High cross-cultural skills enable expatriates to observe and interpret their environment, build effective interpersonal relationships, and adapt their behavior to fit cross-cultural contexts. These findings are in line with Henderson et al. (2018), who found that team members with high behavioral CQ perform better in cross-border projects.

The study shows that cultural metacognition has the greatest impact on job performance. This is consistent with previous studies, which suggest that expatriates with high cultural metacognition can more effectively plan, monitor, and adjust their cross-cultural adjustment processes(Lorenz et al., 2018). Liao & Thomas (2020) suggests that expatriates with high cultural metacognition can more effectively integrate and apply cultural knowledge and skills, enabling them to better handle complex cross-cultural situations.

*Theoretical Contributions*

This study makes significant theoretical contributions to cultural intelligence (CQ) research in two distinct yet interrelated ways. First, it provides the first empirical validation of Thomas et al.'s (2008) three-dimensional CQ model in the construction industry context, demonstrating its superior explanatory power ($R^2$=0.365) compared to traditional four-dimensional frameworks. Our findings specifically show that removing the conceptually ambiguous motivational dimension (criticized by Thomas et al., 2008) does not diminish predictive validity - in fact, cultural metacognition emerges as the strongest predictor ($\beta$=0.317, p<0.001), supporting the model's parsimony.

Second, and more innovatively, we reconceptualize CQ through the lens of Conservation of Resources (COR) theory, revealing previously overlooked mechanisms. While prior studies (e.g., Jyoti & Kour, 2015; Lorenz et al., 2018) treated CQ primarily as an adaptation tool, our COR perspective demonstrates how cultural metacognition functions as a catalytic resource that: (1) prevents resource depletion in cross-cultural stressors (Hobfoll et al., 2018), and (2) initiates gain spirals through improved social capital accumulation and task mastery. This dual

resource function explains why cultural metacognition outperforms other dimensions - it simultaneously conserves and generates critical performance resources.

*Practical Contributions*
The findings provide empirical support for managing expatriates in Chinese multinational construction firms. First, the HR department should prioritize hiring and selecting individuals with high cultural intelligence for expatriate assignments. Second, the HR department should provide cross-cultural training before departure and after arrival to offer necessary cultural knowledge and cross-cultural skills, further enhancing their cultural metacognition to handle various situations in the host country (Kamal Abdien & Jacob, 2019; Li, 2022).

**Conclusion**
This study redefines CQ's role by showing that: (1) Thomas's three-dimensional model outperforms traditional frameworks in construction contexts, resolving long-standing conceptual ambiguities; and (2) COR theory explains why metacognition matters most—it enables proactive resource accumulation (e.g., trust-building, knowledge integration) unlike behavioral or cognitive CQ. These insights shift the focus from mere 'cultural adaptation' to strategic resource management in expatriate performance. By equipping expatriates with cultural knowledge, cross-cultural skills, and cultural metacognition, Higher levels of cultural intelligence (CQ) significantly enhance individuals' ability to adapt to diverse cultural environments. The findings highlight that among the three dimensions of CQ, cultural metacognition stands out as particularly impactful. This dimension equips individuals with the cognitive tools to reflect on and navigate complex cultural interactions effectively. These insights underscore the importance of cross-cultural training programs that focus on developing CQ, especially cultural metacognition, as a practical strategy for organizations to improve expatriates' performance and their ability to thrive in multicultural settings.

**Limitations and Future Research Directions**
Despite the important findings, this study has certain limitations. First, the data mainly comes from Chinese expatriates working in the construction industry in Malaysia, which may limit the generalizability of the results to other industries and countries. Future research can further verify these findings in different cultural and industry contexts. Second, although the quantitative research method used in this study reveals relationships between variables, it cannot deeply understand the underlying mechanisms. Future research can combine qualitative methods to further explore how cultural intelligence and stress specifically affect expatriate job performance.

## References

Alaeldin, A., Xiaodong, L., & Fan, Y. (2024). Expatriate Construction Professionals' Performance in International Construction Projects: The Role of Cross-Cultural Adjustment and Job Burnout. *Journal of Construction Engineering and Management*, *150*(3), 04024005. https://doi.org/10.1061/JCEMD4.COENG-13912

Ang, S., Ng, K. Y., & Rockstuhl, T. (2019). Cultural intelligence. In *The Cambridge Handbook of Intelligence* (pp. 820–845). Cambridge University Press. https://doi.org/10.1017/9781108770422.035

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. https://doi.org/https://doi.org/10.1111/j.1740-8784.2007.00082.x

Black, J. S., & Gregersen, H. B. (1999). The Right Way to Manage Expats. *Harvard Business Review*, *77*, 52. https://link.gale.com/apps/doc/A54077789/AONE?u=anon~e43b1d01&sid=googleScholar&xid=6b708158

Caligiuri, P. M. (1997). Assessing expatriate success: beyond just "being there". *New Approaches to Employee Management*, *4*, 117–140.

Caligiuri, P. M. (2000). The big five characteristics as predictors of expatriate's desire to terminate the assignment and supervisor-rated performance. In *Personnel Psychology*. https://doi.org/10.1111/j.1744-6570.2000.tb00194.x

Chedru, M., & Ostapchuk, M. (2023). The effect of study abroad and personality on cultural intelligence: A deeper understanding using the expanded model of cultural intelligence. *International Journal of Intercultural Relations*, *92*, 101737.

Chen, Y., Yang, Z., Liu, B., Wang, D., Xiao, Y., & Wang, A. (2024). How cultural intelligence affects expatriate effectiveness in international construction projects. *Engineering, Construction and Architectural Management*, *31*(4), 1696–1714. https://doi.org/10.1108/ECAM-03-2022-0247

Collins, K. S., Duyar, I., & Pearson, C. L. (2016). Does cultural intelligence matter? Effects of principal and teacher cultural intelligence on Latino student achievement. *Journal for Multicultural Education*, *10*(4), 465–488. https://doi.org/10.1108/JME-07-2015-0026

Côté, K., Lauzier, M., & Stinglhamber, F. (2021). The relationship between presenteeism and job satisfaction: A mediated moderation model using work engagement and perceived organizational support. *European Management Journal*, *39*(2), 270–278. https://doi.org/10.1016/j.emj.2020.09.001

Demerouti, E., Bakker, A. B., Despoina, X., & Demerouti, E. (2019). Job Demands-Resources Theory and the Role of Individual Cognitive and Behavioral Strategies. In T. , P. M. Taris & H. DeWitte (Eds.), *The fun and frustration of modern working life: Contributions from an occupational health psychology perspective* (pp. 94–104). Pelckmans Pro.

DeNisi, A. S., & Sonesh, S. (2016). Success and failure in international assignments: A review and a proposed multi-dimensional model. *Journal of Global Mobility*, *4*(4), 386–407. https://doi.org/10.1108/JGM-12-2015-0060

Earley, P. C. (2002). Redefining interactions across cultures and organizations: Moving forward with cultural intelligence. *Research in Organizational Behavior*, *24*, 271–299.

Earley, P. C., & Ang, S. (2003). *Cultural intelligence: Individual interactions across cultures* (P. C. Earley & S. Ang, Eds.). Stanford University Press.

Fakhreldin, H. (2011). The effect of cultural intelligence on employee performance in international hospitality industries: A case from the hotel sector in Egypt. *International Journal of Business and Public Administration, 8*, 1–19.

Guang, X., & Charoensukmongkol, P. (2022). The effects of cultural intelligence on leadership performance among Chinese expatriates working in Thailand. *Asian Business and Management*, *21*(1), 106–128. https://doi.org/10.1057/s41291-020-00112-4

Hair, J. (2009). Multivariate data analysis. *Exploratory Factor Analysis*.

Hair, J. F., L.D.S. Gabriel, M., da Silva, D., & Braga Junior, S. (2019). Development and validation of attitudes measurement scales: fundamental and practical aspects. *RAUSP Management Journal*, *54*(4), 490–507. https://doi.org/10.1108/RAUSP-05-2019-0098

Hao, Z. (2023). Research on Human Resource Management of Overseas Enterprises. *Finance and Management International Academic Forum* , 31–33.

Henderson, L. S., Stackman, R. W., & Lindekilde, R. (2018). Why cultural intelligence matters on global project teams. *International Journal of Project Management*, *36*(7), 954–967. https://doi.org/10.1016/j.ijproman.2018.06.001

Hobfoll, S. E. (1989). Conservation of Resources:A New Attempt at Conceptualizing Stress. *American Psychologist*, *44*(3), 513–524.

Hobfoll, S. E. (2002). Social and psychological resources and adaptation. *Review of General Psychology*, *6*(4), 307–324. https://doi.org/https://doi.org/10.1037//1089-2680.6.4.307

Hobfoll, S. E., Halbesleben, J., Neveu, J.-P., & Westman, M. (2018). Conservation of Resources in the Organizational Context: The Reality of Resources and Their Consequences. *Annual Review of Organizational Psychology and Organizational Behavior*, *5*, 103–131. https://doi.org/10.1146/annurev-orgpsych

Huang, H., Liu, H., Huang, X., & Ding, Y. (2020). Simulated home: an effective cross-cultural adjustment model for Chinese expatriates. *Employee Relations*, *42*(4), 1017–1042. https://doi.org/10.1108/ER-09-2019-0378

Jyoti, J., & Kour, S. (2015). Assessing the cultural intelligence and task performance equation Mediating role of cultural adjustment. *Cross Cultural Management*, *22*(2), 236–258. https://doi.org/10.1108/CCM-04-2013-0072

Kamal Abdien, M., & Jacob, M. (2019). Cross-cultural training and cultural intelligence of hospitality students: a case study in Egypt and Spain. *Journal of Teaching in Travel & Tourism*, *19*(3), 191–215.

Kawai, N., & Strange, R. (2014). Perceived organizational support and expatriate performance: Understanding a mediated model. *International Journal of Human Resource Management*, *25*(17), 2438–2462. https://doi.org/10.1080/09585192.2014.884615

Lages, C. R., Piercy, N. F., Malhotra, N., & Simões, C. (2020). Understanding the mechanisms of the relationship between shared values and service delivery performance of frontline employees. *The International Journal of Human Resource Management*, *31*(21), 2737–2760. https://doi.org/10.1080/09585192.2018.1464491

Lee, L. Y., & Sukoco, B. M. (2010). The effects of cultural intelligence on expatriate performance: The moderating effects of international experience. *International Journal of Human Resource Management*, *21*(7), 963–981. https://doi.org/10.1080/09585191003783397

Li, C. (2022). Meta-analysis of the impact of cross-cultural training on adjustment, cultural intelligence, and job performance. *Career Development International*, *27*(2), 185–200.

Liao, Y., & Thomas, D. C. (2020). Conceptualizing cultural intelligence. *Cultural Intelligence in the World of Work: Past, Present, Future*, 17–30.

Lorenz, M. P., Ramsey, J. R., & Richey Jr, R. G. (2018). Expatriates' international opportunity recognition and innovativeness: The role of metacognitive and cognitive cultural intelligence. *Journal of World Business*, *53*(2), 222–236. https://doi.org/10.1016/j.jwb.2017.11.004

Nam, K. A., & Park, S. (2019). Factors Influencing Job Performance: Organizational Learning Culture, Cultural Intelligence, and Transformational Leadership. *Performance Improvement Quarterly*, *32*(2), 137–158. https://doi.org/10.1002/piq.21292

Nazir, S., Shafi, A., Atif, M. M., Qun, W., & Abdullah, S. M. (2019). How organization justice and perceived organizational support facilitate employees' innovative behavior at work. *Employee Relations: The International Journal*, *41*(6), 1288–1311. https://doi.org/https://doi.org/10.1108/ER-01-2017-0007

Ott, D. L., & Michailova, S. (2018). Cultural intelligence: A review and new research avenues. *International Journal of Management Reviews*, *20*(1), 99–119. https://doi.org/https://doi.org/10.1111/ijmr.12118

Setti, I., Sommovigo, V., & Argentero, P. (2022). Enhancing expatriates' assignments success: the relationships between cultural intelligence, cross-cultural adaptation and performance. *Current Psychology*, *41*(7), 4291–4311. https://doi.org/10.1007/s12144-020-00931-w

Sri Ramalu, S. (2012). The Effects of Cultural Intelligence on Cross-Cultural Adjustment and Job Performance amongst Expatriates in Malaysia. *International Journal of Business and Social Science*, *2*(9), 59–71. www.ijbssnet.com

Thomas, D. C., Elron, E., Stahl, G., Ekelund, B. Z., Ravlin, E. C., Cerdin, J. L., Poelmans, S., Brislin, R., Pekerti, A., Aycan, Z., Maznevski, M., Au, K., & Lazarova, M. B. (2008). Cultural intelligence: Domain and assessment. *International Journal of Cross Cultural Management*, *8*(2), 123–143. https://doi.org/10.1177/1470595808091787

Thomas, D. C., & Inkson, K. C. (2017). *Cultural intelligence: Surviving and thriving in the global village*. Berrett-Koehler Publishers.

Thomas, D. C., Liao, Y., Aycan, Z., Cerdin, J. L., Pekerti, A. A., Ravlin, E. C., Stahl, G. K., Lazarova, M. B., Fock, H., Arli, D., Moeller, M., Okimoto, T. G., & Van De Vijver, F. (2015). Cultural intelligence: A theory-based, short form measure. In *Journal of International Business Studies* (Vol. 46, Issue 9, pp. 1099–1118). Palgrave Macmillan. https://doi.org/10.1057/jibs.2014.67

Viswesvaran, C., & Ones, D. S. (2017). Job Performance: Assessment Issues in Personnel Selection. In *The Blackwell Handbook of Personnel Selection,* (pp. 354–375). https://doi.org/10.1002/9781405164221.ch16

Wawrosz, P., & Jurásek, M. (2023). The Role of Cultural Intelligence Facets in Cross-Cultural Adjustment. *Journal of Intercultural Communication Research*, *52*(2), 216–235. https://doi.org/10.1080/17475759.2022.2155863

Wen, J., Huang, S. S., & Hou, P. (2019). Emotional intelligence, emotional labor, perceived organizational support, and job satisfaction: A moderated mediation model. *International Journal of Hospitality Management*, *81*, 120–130. https://doi.org/10.1016/j.ijhm.2019.01.009

Xue, J., Shen, G. Q., Yang, R. J., Zafar, I., Ekanayake, E. M. A. C., Lin, X., & Darko, A. (2020). Influence of formal and informal stakeholder relationship on megaproject performance: a case of China. *Engineering, Construction and Architectural Management*, *27*(7), 1505–1531. https://doi.org/10.1108/ECAM-07-2019-0353