

# Does cultural intelligence matter within cross-cultural teams in hospitality industry? Understanding the role of team dissimilarity climate

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#### **Abstract**

Cross-cultural teams have become integral units of international hospitality enterprises given the rapid development of globalization. How to effectively stimulate team members' performance in a cross-cultural context has thus become a growing concern. This paper aims to explore whether, how, and when cultural intelligence influences team members' performance in cross-cultural teams. Data analysis from 440 employees nested in 100 cross-cultural teams of an international hotel chain revealed that cultural intelligence is positively associated with individual role performance via cross-cultural adjustment. In addition, the above indirect relationship was found to be stronger when a higher level of team dissimilarity climate was present. Our findings shed light on how situational factors and personal traits interact in a diverse range of work environments. The practical implications for international organizations of fully utilizing the benefits of cultural diversity in the workplace are also discussed.

 $\textbf{Keywords} \ \ Cultural \ intelligence \cdot Cross-cultural \ adjustment \cdot Individual \ performance \cdot Team \ dissimilarity \ climate \cdot Cross-cultural \ management$ 

# Introduction

As globalization accelerates, an increasing number of hospitality enterprises are trying to better participate in the global market competition through transnational mergers and acquisitions (Adler & Aycan, 2018; Cui et al., 2016). Team diversity has therefore been found to be a typical team characteristic that strongly determines the quality of team performance (Bogilović et al., 2020). Most hospitality enterprises are often disgruntled during cross-border mergers

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and acquisitions, and the lack of effective management of diverse cross-cultural teams is one of the most salient reasons (Caligiuri & Lundby, 2015; Thomas & Peterson, 2017). A cross-cultural team, according to Stahl et al. (2010), is a group of people from different cultural backgrounds who work together to achieve mutual goals for the benefit of their organization. This includes their cultural heritage as well as the culture of their professional upbringing and journey (Romani et al., 2018). Accordingly, in our case, we defined cross-cultural teams in China as teams containing members coming from at least one different country besides China. Cross-cultural team members face serious barriers, such as behavioral and cognitive errors caused by vastly different cultural backgrounds, including differing religious beliefs and customs, and individual differences in psycho-social behaviors, all of which have a negative impact on individual performance (e.g., Adler & Aycan, 2018; Crowne, 2013).

In the cross-cultural context, an iterative, ongoing understanding of the diverse structure, and the dissimilarity climate of the team, is essential for managers to adopt contingency management strategies to deal with various complex human resource management problems (Adler & Aycan, 2018). In this state of complexity, the concept of cultural



intelligence has garnered significant attention in both theory and practice. Cultural intelligence (i.e., CQ) proposed by Earley and Ang (2003) may help in this endeavor, as the construct refers to a person's ability to successfully adapt to new cultural settings by collecting and processing information, making sound judgments, and taking effective measures to better understand others. Existing empirical studies have suggested that individual CQ has a positive influence on individual adjustment and multifaceted aspects of employee performance, with a great interest in expatriates' CQ as well as its effects on adjustment and performance during international business transactions (e.g., Hu et al., 2019; Jyoti & Kour, 2017; Schreuders-van den Bergh and Plessis (2016); Setti et al., 2020; Vlajčić et al., 2019). However, despite its flourishing studies, whether individuals' CQ still performs well within cross-cultural teams in hospitality industries is in its infancy (Lim & Ok, 2021; Yari et al., 2020). As managing global workplace diversity continues to become increasingly important in hospitality industries (e.g., Mor Barak et al., 2016), How to effectively stimulate team members' performance in cross-cultural contexts has become a critical topic for hospitality firms seeking to gain a competitive advantage in international trade (Sakdiyakorn & Wattanacharoensil, 2018).

To this end, the current study aims to explore whether and how team members' CQ influence their performances within cross-cultural teams in hospitality industries. We specifically focus on individual role-based performance, which reflects role-related behavior at work, including the job role, innovator role, and team role (Welbourne et al., 1998). In addition, given cross-cultural adjustment is also regarded as a key determinant of individuals' performance in diverse teams (e.g., Miao et al., 2018; Templer et al., 2006) as well as performing as one of the key outcomes for CQ (e.g., Hu et al., 2020), we propose that cross-cultural adjustment serves as an important mediator in investigating the influencing mechanism of CQ on individual role performance.

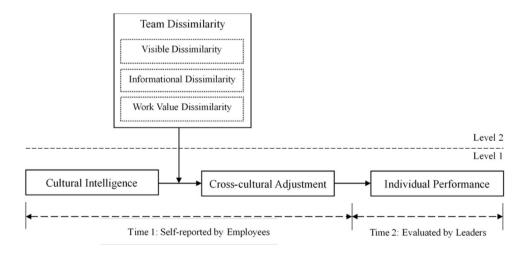
Individuals with higher CQ are expected to perform better at work because they are more skillful in adjustment to new cultural contexts, that is, performing higher levels of crosscultural adjustment (Ramalu et al., 2012).

Notably, given previous studies have mainly discussed the influence of individual CQ at the individual level, whether there exist higher-level boundary conditions for these relationships has not received sufficient attention (Hu et al., 2019; Ott & Michailova, 2018). Scholars have argued for the importance of taking an interactional approach, taking into account the interaction between contextual elements and personal traits, especially when investigating the role of personal traits on work outcomes (e.g., Du et al., 2021; Jiang et al., 2021; Schaufeli, 2016). The current study thus adopts the interactional view and suggests that a critical team contextual factor will influence the impact of individual CQ on performance in cross-cultural teams: team dissimilarity climate. Team dissimilarity refers to the degree to which a person is differen from other members regarding various characteristics (Jackson et al., 1995; Presbitero, 2019). We then define team dissimilarity climate as describing the average value of how team members perceive dissimilarity existing within their cross-cultural teams.

Trait Activation Theory (Tett & Burnett, 2003) helps our argument about the boundary condition of team dissimilarity climate, in which it points out that personality traits are regarded as underlying potentials in a person that can be triggered into action by certain contextual cues relating to the traits' attributes. To this point, CQ can be defined as a trait-like construct (Earley & Ang, 2003), which should also be activated and influenced by certain relevant contextual cues. We posit that team dissimilarity climate serves as one such contextual cue, which facilitates the functioning of individual CQ and, subsequently, increases cross-cultural adjustment and individual performance.

Overall, the current study aims to build a multilevel conceptual model (Fig. 1) to investigate whether CQ affects

**Fig. 1** A multilevel theoretical model





employee role performance in cross-cultural teams in hospitality industries. Cross-cultural adjustment and team dissimilarity climate are also introduced as mediators and boundary conditions, respectively, thus elaborating our understanding of the above relationship better. To empirically examine our theoretical model, we aim to conduct a two-wave on-site survey among cross-cultural teams from the hospitality industry. The findings may not only enrich our knowledge of the association between CQ and individual performance within cross-cultural teams by adopting an interactional view, but also provide practical insight into how to effectively manage cross-cultural teams in multinational hospitality enterprises.

# Theory and hypotheses

# **Cultural intelligence**

Under the background of higher requirements on cross-cultural management ability during international and transnational operations (Thomas & Peterson, 2017), a new research direction named cultural intelligence (i.e., CQ) has gained considerable attention (e.g., Ott & Michailova, 2018; Yari et al., 2020). Earley and Ang (2003) proposed the concept of CQ, referring to an individual's ability to effectively adaptation to new cultural settings through the collection and processing of information, the making of judgments, and the implementation of effective measures. CQ is considered a four-factor construct: Meta-cognitive CQ refers to people's cultural consciousness and awareness, which is manifested in their ability to challenge and recognize previously existing cultural assumptions (Ang et al., 2007); Cognitive CQ is defined as the knowledge and familiarity with cultural norms, culturally relevant practices, and traditions gained through learning and personal experience; Motivational CQ can be used to assess self-efficacy and goal-setting proclivity of a person, particularly in directing his/her energy toward both learning about and operating effectively under crosscultural situations.; Behavioral CQ reflects a person's ability to exhibit verbal and nonverbal actions when engaging in a conversation with people from various cultures (Earley & Ang, 2003). Through the review of the definition of CQ and its four dimensions, we believe that the four dimensions of CQ are closely relevant and progress step by step to reflect a person's level of CQ (Ott & Michailova, 2018). Therefore, the current study discusses the influence of CQ as a higher-level concept including these four subdimensions. Individuals with a high CO are culturally competent (Ang et al., 2007), possessing a set of cognitive, behavioral, and motivational skills that enable them to work successfully with individuals from diverse cultures and adapt to new environments (Yari et al., 2020).

# Cultural intelligence and individual role performance

Considering individual performance's irreplaceable importance within cross-cultural teams in hospitality industries (Sakdiyakorn & Wattanacharoensil, 2018), the current research pays much attention to the influence of CQ on team members' performance. Several researchers, particularly in the last few decades, have emphasized the importance of non-job components of performance in service industries (e.g., Austin & Villanova, 1992; Chen, 2017). As such, we specifically focus on individual role-based performance, in order to echo the degree to which individuals with high CQ expect to fulfill their roles (Welbourne et al., 1998). A high-CO employee is enthusiastic about working with others as well as devotes a high degree of collaborative energy to fulfill role expectations, while the performance of individuals depends on the degree to which these individuals independently fulfill role expectations (Ang et al., 2007). Welbourne et al. (1998) introduced the concept of role-based performance in order to investigate role-related behavior in the workplace, in response to a call for a shift away from a focus on fixed tasks and toward a more comprehensive understanding of work roles in flexible organizational settings (Ilgen & Hollenbeck, 1991). Based on the diversified context we have studied, this paper argues that in cross-cultural teams, individuals' job performance is mainly reflected in three roles: job role (i.e., accountability for the quality and quantity of work tasks), innovator role (i.e., accountability for discovering new methods and developments), and team role (i.e., taking responsibility for teamwork). Our performance measure is multidimensional rather than unidimensional, accounting for multiple roles (the above three roles) employees may take on in cross-cultural teams (Wallace et al., 2009).

We expect that within cross-cultural teams, team members' CQ has a positive influence on their role-based performance. On the one hand, people with high CQ are aware (i.e., meta-cognitive CQ) of different cultures, have relevant knowledge (i.e., cognitive CQ), and can flexibly adjust their behaviors to adapt to the culturally diverse circumstance (i.e., behavioral CQ), all of which make individuals more competent in completing a specific task within cross-cultural situations (Sucher & Cheung, 2015; Yari et al., 2020), given that they possess a higher level of expectation and familiarity with working with diverse groups of individuals to fulfill their goals (Vroom, 1964). Individuals with high CQ, on the other hand, have an internal interest and motivation to better understand diverse cultures (i.e., motivational CQ), as well as a stronger desire to meet role expectations (i.e., fulfill role performance expectations), indicating that performance has a greater meaning for these individuals (Vroom, 1964), and they are interested in improving their performance (Welbourne et al., 1998). Therefore, employees



having high levels of CQ possess stronger incentive power to finish tasks, thus improving individual performance in cross-cultural teams.

H1. Individuals' cultural intelligence is positively related to their role performance within cross-cultural teams of hospitality industry.

# Cross-cultural adjustment's mediating role

Black and Stephens (1989) classified cross-cultural adjustment into three dimensions based on organizational context. The degree of comfort with overall living standards like weather, accommodation, and food, is referred to as general adjustment; the level of satisfaction with work-related, such as performance standards and job responsibilities, is referred to as work adjustment. The extent to which the host country nationals are socialized is referred to as interaction adjustment. (Black & Gregersen, 1991). Cross-cultural adjustment is regarded as a key determinant of individuals' work performance (e.g., Jaya et al., 2022; Jyoti & Kour, 2015; Miao et al., 2018; Thomas et al., 2011). Individuals who work in culturally diverse teams face inherent challenges because they are forced to collaborate with people from different cultural backgrounds. Individuals with high cross-cultural adjustment can successfully adjust to a new environment and work more effectively with people who hold different social values in such circumstances (Jaya et al., 2022; Sit et al., 2017). This allows these workers to reduce pressure and stress, resulting in better task completion and individual performance (Miao et al., 2018). Existing research has confirmed that people who can optimistically adapt themselves through cross-cultural situations perform similarly to how they perform in their home environments, implying that this phenomenon has inherent carryover effects (e.g., Jyoti & Kour, 2017; Lim & Ok, 2021). Individuals who fail to adjust to their new environments, on the other hand, frequently exhibit avoidance or withdrawal symptoms, jeopardizing team and individual job tasks (Sit et al., 2017).

Because cross-cultural adjustment affects individual performance significantly, a growing number of scholars have studied the factors that influence cross-cultural adjustment, including external factors such as social support (e.g., Jyoti & Kour, 2017; Ng et al., 2017), and internal factors such as personality (e.g., Ang et al., 2007; Huff et al., 2014) and cultural intelligence (e.g., Kour & Jyoti, 2022; Setti et al., 2020). Our research focuses on the connection between cultural intelligence and cross-cultural adjustment and hypothesizes that cultural intelligence and individual role performance are mediated by cross-cultural adjustment. More specifically, individuals with high cognitive CQ and behavioral CQ have specific knowledge and familiarity with cultural norms, practices, and customs, as well as the ability to

interact with people from different cultures using both verbal and nonverbal cues (Ang et al., 2007). This improves their general adjustment to unfamiliar environments (Ramalu et al., 2012) and allows them to improve their interaction adjustment with person from various cultures (Ang et al., 2007; Ng et al., 2017). CQ's metacognitive and motivational dimensions facilitate cultural-related learning and create innate interest in other cultures, thereby improving self-efficacy, goal setting, and work adjustment (Chen et al., 2010; Kour & Jyoti, 2022). Therefore, People with a higher CQ are expected to perform better at work because they are more capable of adapting to new cultural circumstances, thus improving their performance.

H2. Individuals' cross-cultural adjustment mediates the relationship between cultural intelligence and individual role performance within cross-cultural teams of hospitality industry.

# Moderating role of team dissimilarity climate

Dissimilarity refers to the degree to which a person distinguishes from other members regarding various aspects of characteristics (Jackson et al., 1995; Presbitero, 2019). In the current research, we explore team dissimilarity on the following dimensions: visible, informational, and work value dissimilarity. The differences in visible characteristics like age, gender, and ethnicity can be illustrated by visible dissimilarity; the differences in characteristics like professional settings, work tenure, and work-related experience are defined as informational dissimilarity (Hobman et al., 2004); and work value dissimilarity portrays differences in work ethic (Harrison et al., 1998), work values and motivations when performing tasks (Jehn et al., 1999). We are particularly interested in the effect of perceived dissimilarity (i.e., how individuals perceive themselves to be different from other team members) rather than actual dissimilarity (i.e., the degree to which an individual objectively differs from other team members). A burgeoning number of studies have discovered that team members' individual perceptions of dissimilarity influence critical outcomes such as team performance (e.g., Ormiston, 2016; Presbitero, 2019; Shemla et al., 2016), supporting the idea that people react based on their perceptions of reality rather than actual reality (Ferris & Judge, 1991). In addition, we label the construct team dissimilarity climate, to describe the average value of how team members perceive dissimilarity existing within their cross-cultural teams. Team climate can be described as team members' collective appraisals, feelings, and beliefs (Zohar & Luria, 2005), and it has evolved from an all-encompassing concept to a facet-specific concept (Schneider & Reicher, 1990). That is, any organizational process can be understood via a climate perspective (Adamovic, 2020), for example,



when members of cross-cultural teams in an organization perceive events and context as dissimilar, a team dissimilarity climate develops. Team climate, as one team characteristic, may affect team members' level of well-being (e.g., Adamovic, 2020; Grandey et al., 2012; Kozusznik et al., 2015). Thus, we hypothesize that the impact of CQ on employees' performance will be influenced by the aforementioned critical team contextual factors (i.e., team dissimilarity climate), that is, team dissimilarity climate strengthens the cultural intelligence-performance relationship.

Personality traits are perceived as underlying potentials in a person that can be provoked into action by certain contextual cues relevant to the traits' characteristics, according to the Trait Activation Theory (Tett & Burnett, 2003). CQ performs as a unique psychological faculty that is employed in particular social contexts (e.g., cross-cultural contexts; Ang et al., 2007). We, therefore, posit that CQ can be regarded as a trait-like construct that also should be activated by certain contextual cues. We anticipate that the climate of team dissimilarity will be one such contextual cue in strengthening the cultural intelligence-performance relationship. Specifically, when there exist high levels of team dissimilarity, conflicts tend to follow to some extent. Because visible demographic variables (e.g., age, gender, and racial background) are inclined to be employed in social categorization processes (Tsui et al., 1992), visible dissimilarity can easily cause relationship conflict (Pelled et al. 2001). Consistent with the information/decision-making perspective (Jehn et al., 1997), informational dissimilarity has been found to bring about task-related conflict (Adamovic, 2020). Furthermore, people with dissimilar work values may have different cognitive processing aspects and thus perceive tasks differently (Meglino et al., 1989), which can lead to task conflict. When an individual's values are different from those of other team members, the individual and the other team members have less personal attraction (Harrison et al., 1998), resulting in increased relationship conflict. In the context of a higher team dissimilarity climate, team members are exposed to situational cues that indicate a greater need for cross-cultural adjustment to effectively communicate and cooperate with team members from different cultural backgrounds (Presbitero, 2019). Consequently, team members will sense that reinforcing their individual CQ is in line with the needs of their workplace. In this situation, individuals' cultural intelligence is more likely to be activated (Tett & Burnett, 2003), so as to obtain higher cross-cultural adjustment and thus improve individual performance. In contrast, teams with lower team dissimilarity climate send fewer signals to members, showing fewer signs of cultural intelligence and cross-cultural adjustment with the aim to complete their tasks. Therefore, individuals may be less inclined to intentionally activate their cultural intelligence. We posit that a team dissimilarity climate creates a work environment that allows individual cultural intelligence to function and, subsequently, increases cross-cultural adjustment and individual performance.

H3. Team dissimilarity climate moderates the indirect relationship between cultural intelligence and individual role performance via cross-cultural adjustment within cross-cultural teams of hospitality industry, such that the indirect relationship will become stronger when team visible dissimilarity (a), team informational dissimilarity (b), team work value dissimilarity (c) is higher.

#### Method

# Participants and procedures

A convenience sample of cross-cultural teams from an international hotel chain was selected to participate in our study. According to Stahl et al. (2010), a cross-cultural team is a group of people with both cross-national and intra-national diversity who work together to achieve the team's and the organizations' common goals. The following were the inclusion criteria for cross-cultural teams: 1) the team included employees from at least two different countries; and 2) team members reported to the same leader or supervisor. The team size ranged from three to ten employees.

Surveys sent through e-mail were employed to gather data, and an informed consent form was included. A total of 125 cross-cultural teams (each team involves one supervisor and three to five team members) were chosen at random from an international hotel chain. Data was collected from various sources and at different times to avoid common method variance (Podsakoff et al., 2003). First, paired questionnaires (i.e., leader version and employee version) were distributed, which had previously been encoded using unified coding. Second, the questionnaires were distributed at two different times separated by one month. At time 1 (October 2020), employees self-reported their CQ, cross-cultural adjustment, and perceived team dissimilarity climate. At time 2 (November 2020), leaders rated their subordinates' role performance. A cover letter surrounding the questionnaire mentioned that the survey was being conducted purely for scholarly purposes, and respondents were guaranteed that their responses would be kept confidential. To avoid invasiveness, we distributed our questionnaires in both electronic and paper formats and set a one-hour time limit for respondents to submit the questionnaires during their workday. The completed questionnaires could be sent to the assigned email address or to the HR departments of the team members.

We distributed 125 questionnaires to team leaders and 500 questionnaires to members in total. The response rate for the 117 leader and 467 subordinate questionnaires was 93.6%



and 93.4%, respectively. After removing the uncompleted and unmatched questionnaires, we obtained a total of 100 leaders and 440 subordinate questionnaires resulting in an effective rate of 80% and 88%, respectively. We concentrated on the demographics of team members. Men and women accounted for 60.2% and 39.8%, respectively. Participants' major age ranges were 26–45 years old (50.2% were between the ages of 26 and 35, and 31.6% were between the ages of 36 and 45). Participants had a high level of education, with the majority (53.2%) holding a master's degree. The majority of the participants were Chinese (59.1%), with British and American personnel accounting for about 12% each. The participants' English proficiency was very high, with 61.8% in the "advanced" group and 21.8% in the "proficient" group.

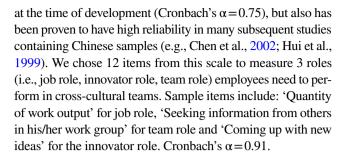
#### Measures

We developed questionnaires based on valid scales found in the literature. By using back-and-forth translation procedures (Brislin, 1986), every item that was originally written in English was translated into Chinese. We used a five-point Likert scale from "1" (strongly disagree) to "5" (strongly agree).

Cultural intelligence We adapted the Cultural Intelligence Scale (CQS) (Ang et al., 2007) was used. This scale had good reliability when it was developed (Cronbach's  $\alpha=0.88$ ), and has gained high reliability in many empirical studies in which Chinese samples were used (e.g., Bücker et al., 2014; Fu & Charoensukmongkol, 2021). The CQS is divided into four subscales: four items for metacognitive CQ with the sample item "I am conscious of the cultural knowledge I apply to cross-cultural interactions," six items for cognitive CQ with the sample item "I know the legal and economic systems of other cultures," five items for motivational CQ with the sample item "I enjoy interacting with people from different cultures," and five items for behavioral CQ with the sample item "I alter my facial expressions when a cross-cultural interaction occurs." Cronbach's  $\alpha=0.93$ .

Cross-cultural adjustment Black and Gregersen's (1991) scale with good original reliability (Cronbach's  $\alpha$ =0.87) was used. Previous studies also confirmed its good reliability based on Chinses samples (Hu et al., 2020; Zhang, 2013). The scale had six general adjustment items, four interaction adjustment items, and three work adjustment items. Examples include "adjust to the company's health care facilities" for general adjustment and "adjust to socialize with people from different cultures" for interaction adjustment., and "have specific job responsibilities" for work adjustment. Cronbach's  $\alpha$ =0.91.

**Individual performance** We used the Role Based Performance Scale (RBPS) developed by Welbourne et al. (1998). Previous studies have stated that this scale not only had good reliability



**Team dissimilarity climate** We adopted the 6-item scale developed by Hobman et al. (2004). Two items were used to assess each type of perceived dissimilarity (visible, informational, and work value). Each dimension had relatively good reliability when it was first developed (Cronbach's  $\alpha = 0.67$ , 0.72, and 0.79 for visible, informational and work values, respectively). Previous empirical studies in which Chinese samples were used also confirmed its high reliability (e.g., Jiang et al., 2017; Tang & Naumann, 2016). For visible dissimilarity, sample items include "I feel I am visibly dissimilar to other group members" and "I feel my work values and/ or motivations are dissimilar to other group members" for work value dissimilarity; "I feel I am professionally and/or educationally dissimilar to other group members" for informational dissimilarity. Cronbach's alpha coefficients for visible, informational, and work value dissimilarity were 0.83, 0.77, and 0.82, respectively. Given that we are interested in the climate of team dissimilarity at the team level, we aggregated individual-level data into team-level data by computing the mean value of perceived team dissimilarity at the individual basis. The indicators of rwg, ICC (1), and ICC (2) (James et al., 1984; Bliese, 2000) were used to aassess whether the construct measurement had enough intra-group consistency and inter-group heterogeneous nature. The ICC (1) for visible, informational and work value dissimilarity were 0.28, 0.31, 0.23 (>0.05), respectively; The ICC (2) were 0.64, 0.67, 0.57 (> 0.5), respectively; The mean  $rwg_{(i)}$ was 0.78, 0.81, 0.73(> 0.7), respectively.

**Control variables** Consistent with prior research, age, gender, education, and nationality were measured as control variables (e.g., Chen et al., 2014).

# Results

# Preliminary analysis (CFA)

CFAs were used to investigate the dissimilarities of our main variables. Table 1 depicts the proposed four-factor model  $(X^2/df = 3.01, RMSEA = 0.05, SRMR = 0.05, CFI = 0.90, TLI = 0.89)$  matches the data better than possible alternatives, indicating that they are distinct. Table 2 summarizes



the means, standard deviations, and correlations of the focal variables used in this study. The hypothesized relationships were provided by preliminary evidence given we obtained predicted correlations.

# **Hypotheses testing**

Considering the nested nature of the data (i.e., individuals from the same cross-cultural teams share the same team dissimilarity climate), all hypotheses were examined using Mplus version 7.4 (Muthén & Asparouhov, 2015). We estimated null models with no predictors for both the Level 1 and Level 2 functions to test the significance of between-group variance in individual performance scores. We discovered that 10.3% of the total variance in individual performance was within-individual (Cohen, 1988), and that the differences in average individual performance scores between individuals were significant and meaningful (p < 0.01).

First, we test Hypotheses 1 and 2 using the four conditions recommended by Baron and Kenny (1986) for establishing mediation. Table 3 displays the results. First, CQ was positively related to cross-cultural adjustment (M4:  $\beta = 0.70$ , p < 0.01). Second, CQ was positively associated with individual performance (M1:  $\beta = 0.67$ , p < 0.01), which then supported Hypothesis 1. Third, cross-cultural adjustment was positively related to individual performance (M2:  $\beta = 0.62$ , p < 0.01). When cross-cultural adjustment was included, the relationship between CO and individual role performance became weaker but still significant (M3:  $\beta = 0.32$ , p < 0.01), suggesting the mediation effect exists. We then further examine whether the mediation effect is significant by using a parametric bootstrap procedure (Preacher et al., 2007). The results of 2,000 Monte Carlo replications show a positive, indirect relationship between CQ and individual performance through cross-cultural adjustment (indirect effect = 0.57, 95% CI excluded 0: [0.493, 0.642]). Taken together, Hypothesis 2 was supported.

**Table 1** Comparison of measurement models

Models	X <sup>2</sup> /df	RMSEA	SRMR	CFI	TLI
Hypothesized six-factor model: CQ, CCA, IP, VD, ID, WD	3.01	.05	.05	.90	.89
Alternative four-factor model: CQ, CCA, IP, VD+ID+WD	4.25	.06	.07	.71	.70
Alternative three-factor model: CQ+CCA, IP, VD+ID+WD	4.42	.09	.07	.69	.68
Alternative two-factor model: CA+CCA+IP, VD+ID+WD	5.14	.10	.08	.63	.61
Alternative single-factor model: $CA + CCA + IP + VD + ID + WD$	5.60	.10	.08	.59	.57

N=440; CQ cultural intelligence, CCA cross-cultural adjustment, IP individual performance, VD visible dissimilarity, ID informational dissimilarity, WD work value dissimilarity; "+" represents two factors merged into one

Table 2 Means, standard deviations, and correlations among variables

Variables	M	SD	1	2	3	4	5	6	7	8	9	10	11
1.Gender	1.39	.49	'	'			'	'	'		'		
2.Age	2.19	.72	02										
3. Nationality	1.99	1.49	.06	.18**									
4.Education	3.63	.66	.02	.40**	.02								
5.English Level	4.05	.64	.09	.22**	.13**	.36**							
6.CQ	3.55	.71	.01	.24**	.05	.40**	.30**	(.93)					
7.CCA	3.73	.75	04	.08	.03	.26**	.15**	.52**	(.91)				
8.IP	3.78	.74	.09	.09*	.07	.19**	.06	.40**	.53**	(.91)			
9.VD	3.61	1.09	.05	.05	06	.18**	.26**	.25**	.30**	.30**	(.83)		
10.ID	3.63	1.05	.10*	.06	15**	.23**	.17**	.42**	.39**	.37**	.51**	(.77)	
11.WD	3.17	1.10	.15**	01	05	.06	.08	.23**	.19**	.20**	.40**	.40**	(.82)

N=440; \*, p<.05, \*\*, p<.001; Reliability estimates appear in parentheses across the diagonal; CQ cultural intelligence, CCA cross-cultural adjustment, IP individual performance, VD visible dissimilarity, ID informational dissimilarity, WD work value dissimilarity. Certain variables were coded as numerical coded variables: gender (1=Male, 2=Female), age (1=Less than or equal to 25, 2=26–35, 3=36–45, 4=Greater than or equal to 45), education (1=High school diploma or below, 2=Associate's degree, 3=Bachelor's degree, 4=Master's degree, 5=Doctorate or above), nationality (1=China, 2=America, 3=England, 4=France, 5=Other), English level (1=None, 2=Beginner, 3=Intermediate, 4=Advanced, 5=Proficient)



**Table 3** Hierarchical Linear Modeling Results

	IP			CCA							
	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	
CV:	'	'							'		
Gender	.14*	.18**	.17**	06	03	05	03	06	02	05	
Age	04	.04	.01	12*	02	02	02	02	03	02	
Nationality	.03	.02	.03	.01	00	.00	01	.00	01	.00	
Education	02	.04	00	03	.02	.03	.02	.03	.02	.04	
English Level	16**	09	13**	09	06	05	06	05	04	05	
IV:											
CQ	.67***		.32***	.70***	.60***	.58***	.52***	.48***	.61***	.58***	
Mediator:											
CCA		.62***	.39***								
Moderator:											
VD					11**	10*					
ID							10*	09*			
WD									13**	11**	
Interaction:											
$CQ \times VD$						.33***		.17**			
$CQ \times ID$											
$CQ \times WD$										.35***	
$\mathbb{R}^2$	.39	.42	.44	.60	.54	.57	.50	.52	.54	.57	
R <sup>2</sup> Change	/	/	.05	/	/	.03	/	.02	/	.03	

N (team) = 100 and N (team members) = 440; \*, p < .05; \*\*, p < .001, \*\*\*, p < .00; CQ cultural intelligence, CCA cross-cultural adjustment, IP individual performance, VD visible dissimilarity, ID informational dissimilarity, WD work value dissimilarity

Second, in order to assess moderated mediation (Preacher et al., 2007), we evaluated four conditions: (a) CQ has significant effects on individual performance (as supported by H1 results); (b) CQ and team dissimilarity have significant interactions in predicting cross-cultural adjustment; (c) significant effect of the cross-cultural adjustment on individual performance (supported by results for H2); and (d) across low and high levels of team dissimilarity climate, there is a different conditional indirect effect of CQ on individual performance via cross-cultural adjustment. Moderate mediation occurs when the strength of the conditional indirect effect varies between low and high levels of the moderator.

We ran moderated regressions to test for Condition 2, and the results are shown in Table 3. CQ's interaction with visible dissimilarity was found to be significant in predicting cross-cultural adjustment (M6:  $\beta$ =0.33, p<0.01). Figure 2 plots this interaction. Likewise, in predicting cross-cultural adjustment, the interaction of CQ and informational dissimilarity was significant (M6:  $\beta$ =0.17, p<0.05; see Fig. 3); the interaction of CQ with work value dissimilarity was significant in predicting cross-cultural adjustment (M6:  $\beta$ =0.35, p<0.01; see Fig. 4).

We then examined Condition 4. We defined high and low levels of three-team dissimilarity as one standard deviation above and below the variable's mean score. The conditional indirect effect of CQ on individual performance via crosscultural adjustment was stronger and more significant in the high visible dissimilarity group (effect size = 0.12, 95% CI excluded 0: [0.072, 0.171]), but was weaker in the low visible dissimilarity group (effect size = 0.09, 95% CI excluded 0: [0.044, 0.128]), as shown in Table 4. Moreover, the estimates of these two-mediation effects differ significantly ( $\Delta = 0.04, 95\%$  CI excluded 0: [0.030, 0.090]). Thus, Hypothesis 3a was supported. Likewise, the conditional indirect impacts of CQ on individual performance via a cross-cultural adjustment in high versus low informational dissimilarity group are significantly different ( $\Delta = 0.05, 95\%$ CI excluded 0: [0.029, 0.097]), thus Hypothesis 3b was also supported. Additionally, the conditional indirect effects of CQ on individual performance via cross-cultural adjustment in the high versus low work value dissimilarity group are significantly different ( $\Delta = 0.12, 95\%$  CI excluded 0: [0.057, 0.176]). This supports Hypothesis 3c.

# **Discussion**

The current study built a theoretical model to explore whether, how and when individual CQ influences performance within cross-cultural teams of hospitality industries.



Fig. 2 Interaction between cultural intelligence and visible dissimilarity on cross-cultural adjustment

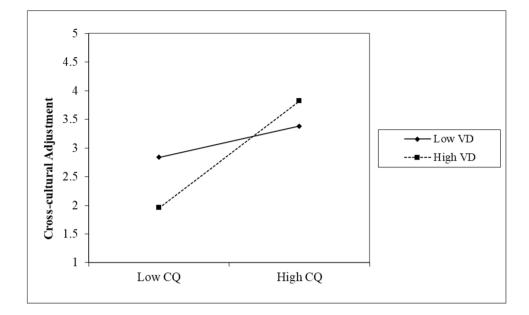
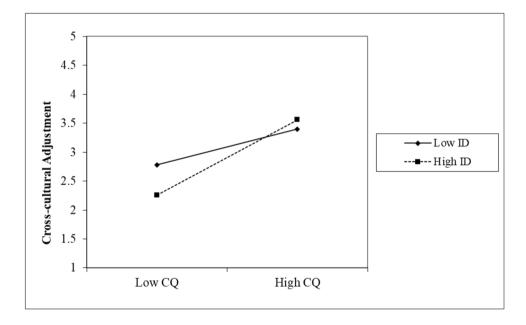


Fig. 3 Interaction between cultural intelligence and informational dissimilarity on cross-cultural adjustment



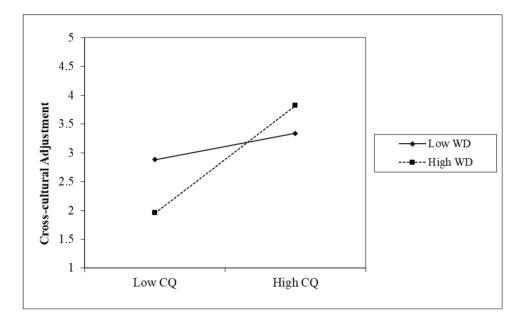
The results of our two-wave survey provided substantial support for our theoretical model. Results showed that Individual CQ had a favorable connection with individual performance, with cross-cultural adjustment acting as a moderator. Additionally, team dissimilarity climate plays a moderating role in the mediated relationship between CQ and individual role performance through cross-cultural adjustment, such that the relationship was stronger when team dissimilarity climate is higher. Among these boundary conditions, work value dissimilarity had the strongest moderating effect than the other two team dissimilarity conditions. These findings are encouraging because they have theoretical and practical implications.

# **Theoretical implications**

First, in order to manage cross-cultural teams effectively in multinational organizations, the concept of CQ has continued to gain considerable attention in recent years with no exception for hospitality and service industries (e.g., Lam et al., 2022; Ott & Michailova, 2018; Thomas et al., 2011). Although extant studies have confirmed the positive influence of CQ on multifaceted aspects of employee work-related performance (e.g., Hu et al., 2019; Jyoti & Kour, 2015, 2017; Setti et al., 2020; Vlajčić et al., 2019), these studies are particularly interested in expatriates' CQ as well as its influence on employees' performance without



Fig. 4 Interaction between cultural intelligence and work value dissimilarity on crosscultural adjustment



**Table 4** Conditional indirect effects of cultural intelligence on individual performance via cross-cultural adjustment

Moderator	Level	Conditional Indirect Effect	Boot SE	95% Confidence Intervals
Visible Dissimilarity	High (+SD)	.12	.03	[.072, .171]
	Low (-SD)	.09	.02	[.044, .128]
	Diff1	.04	.03	[.030, .090]
Informational Dissimilarity	High (+SD)	.13	.02	[.083, .166]
	Low (-SD)	.09	.02	[.043, .127]
	Diff2	.05	.04	[.029, .097]
Work Value Dissimilarity	High (+SD)	.17	.02	[.122, .210]
	Low (-SD)	.05	.02	[.010, .088]
	Diff3	.12	.03	[.057, .176]

exploring whether the positive impact of individuals' CQ still holds within cross-cultural teams in hospitality industries (Yari et al., 2020). Our findings, which confirmed the beneficial impact of CQ on individual performance in crosscultural hospitality teams, stretch prior findings and speak to the generalizability of the CQ-individual performance relationship in cross-cultural contexts. Moreover, we further contribute to the literature by focusing on individuals' role-based performance (i.e., job role, innovator role and team role) in order to illustrate that a high-CQ employee is enthusiastic about working with others and devotes a high degree of collaboration energy to fulfill role expectations (Ang et al., 2007). Additionally, our findings add to the body of empirical evidence demonstrating the role of cross-cultural adjustment as a moderator in the relationship between CQ and individual performance.

Second, scholars have emphasized the importance of investigating the role of personal characteristics on outcomes

from an interactional perspective, that is, the interaction between situational factors and personal characteristics (e.g., Du et al., 2021; Jiang et al., 2020; Schaufeli, 2016), We echoed this call and took team dissimilarity climate as one crucial contextual factor to discern its moderating role on the relationship between CQ and performance in crosscultural teams. Through a climate perspective (Schneider et al., 2013), we posit that dissimilarity can be aggregated as team climate, which is empirically confirmed to affect team members' well-being (e.g., Adamovic, 2020; Grandey et al., 2012; Kozusznik et al., 2015). We focus on exploring the effect of perceived dissimilarity rather than actual dissimilarity, supporting the notion that people react based on their perceptions of reality rather than actual reality (Ferris & Judge, 1991). Therefore, we utilized the team dissimilarity climate construct and confirmed that the impact of individual CQ on individual role performance is influenced by critical team contextual factors (i.e., team dissimilarity



climate). Rather than focusing on single-level relationships between CQ and individual outcomes, our cross-level interactionist model paints a more comprehensive picture of the boundary conditions for the functioning of individual CQ.

# **Practical implications**

How to effectively manage cross-cultural teams has become a key issue for international hospitality enterprises (Lim & Ok, 2021; Nguyen et al., 2021). Our findings highlight that identifying members' CQ in cross-cultural teams of the hospitality industry, as well as enhancing individuals' cultural adjustment, are among several of the primary factors contributing to the successful human resource management of cross-cultural teams in the hospitality context. Our findings provide empirical support that international hospitality enterprises are supposed to attach great importance to employees' CQ, particularly in the recruitment and selection process. For example, in conjunction with other existing recruiting and selection tools, global human resource practitioners can better discern candidates' CQ profiles during the screening and selection process. Human resource professionals can then screen those candidates who have low CQ profiles or choose to provide them with additional learning programs aimed at increasing CO capability. This engagement in human capital training has been found to promote diversity, equity and inclusion, and has been found helpful in developing a more culturally competent workforce as a result (e.g., Lim & Ok, 2021; Nguyen et al., 2021).

As intercultural teams become more common, particularly in the context of remote and virtual work, CQ should be incorporated into a company's core competencies by increasing investment in cross-cultural professional development learning opportunities for existing employees. These relevant programs will help employees become more comfortable working with people from different cultures and will give them more confidence to interact effectively in new and unfamiliar social settings. These experiential learning opportunities will improve the quality of their work experience and, as a result, their individual performance (Roberson et al., 2017; Webber & Donahue, 2001). It is also worth noting that learning and development programs should not only focus primarily on knowledge or cognitive training but also include educational modules on the CQ's motivational and behavioral components. This will provide our depth understanding of CQ, furthering its utility beyond highlighting physical differences in the workplace. Greater exposure to this deep CQ yields promising results, as employees themselves pay more attention to cultivating and exercising their own CQ in the workplace, increasing cross-cultural communication richness as a byproduct (Raver & Van Dyne, 2017).

Experiencing both perceived and actual team dissimilarity is inevitable, particularly in cross-level teams. Team

dissimilarity climate can therefore be framed as thus a kind of stress climate for individuals, which may also affect their well-being (Presbitero, 2019). However, our findings highlight such team dissimilarity may not be always negative. Rather, individuals with high CQ mindfully focus more on specific challenges in such stressful contexts and react to stressors with positive emotions such as hope, goodwill, and vigor in a high team dissimilarity climate (Hargrove et al., 2015). When they define it as eustress, they are more confident that they will be capable of overcoming the unique stress by proficiently mobilizing and utilizing coping resources (Simmons & Nelson, 2007). Our study emphasizes the importance of investigating both the positive and negative aspects of such an occupational stress climate. Occupational stress is a true danger to workers' life satisfaction (Yousaf et al., 2019). Intriguingly, rather than trying to minimize the level of stress caused by the workplace's team dissimilarity climate, practical advice may be given to manage it to a more optimal level. Prevalent management practices have shown that a moderate level of stress or pressure in the workplace leads to higher employee performance than if stress is not available (Li et al., 2021; Yousaf et al., 2019). Framing individual CQ in this manner might therefore support diversity initiatives in the workplace as a practice that takes cognitive effort and resources.

# Research limitations and future research direction

There are several limitations to this study that warrant further investigation. First, the current model did not divide CQ and cross-cultural adjustment into more specific dimensions for research, which can be further considered in subsequent studies. In addition, we may explore more granular underlying processes through which CQ affects individual performance, as well as different high-level contextual factors. Organizational contexts, for example, perceived organizational support (Rhoades & Eisenberger, 2002), may aid in the development of individual CQ. Finally, since CQ is a dynamic competency that is a malleable capability, its effects on cross-cultural adjustment and individual workrelated performance may vary over time. A question worthy of future research is to conduct a longitudinal study, which would provide better knowledge on changes that may have occurred.

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**Data availability** The data that support the findings of this study are available from the corresponding author, [Xinyue Lin, 0173100465@ shisu.edu.cn], upon reasonable request.



#### **Declarations**

**Ethics statement** This study was approved by the Internal Review Board of School of Business and Management, Shanghai International Studies University. All participants provided written informed consent before taking each survey.

Conflicts of interest We declare there are no conflicts of interest.

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