

# Impact of culture differences on performance of international construction joint ventures: the moderating role of conflict management

Impact of  
cultural  
differences

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Junying Liu and Zhipeng Cui

*Department of Construction Management, College of Management and Economics,  
Tianjin University, Tianjin, China*

Yingbin Feng and Srinath Perera

*School of Built Environment, Western Sydney University, Sydney, Australia, and*

Jie Han

*Department of Construction Management, College of Management and Economics,  
Tianjin University, Tianjin, China*

## Abstract

**Purpose** – Cultural differences have been frequently cited as a major source of risks for international joint ventures (IJVs). Cultural differences may cause extensive conflicts in technology, norms and emotion among the international joint venture (IJV) partners. The purpose of this study is to explore the interactive effects of national culture differences (NCDs) and conflict management approaches on the performance of international construction joint ventures (ICJV).

**Design/methodology/approach** – Data were collected using a questionnaire survey method with 143 valid responses. Partial least squares structural equation modeling (PLS-SEM) was used to test the research hypotheses.

**Findings** – It was found that ICJV performance declined with a high degree of NCDs. The negative effect of NCDs on ICJV performance was mitigated by adopting the cooperative conflict management approach; while it was aggravated by adopting the competitive conflict management approach. The findings may provide an alternative way (i.e. adopting the cooperative conflict management approach rather than avoiding or competitive approaches) to address the cultural conflicts in the multicultural project management teams.

**Practical implications** – Firstly, as NCD negatively impacts performance of ICJVs, project managers should pay attention to cultural issues and learn how to manage them; Secondly, as cooperative and competitive conflict management approaches have different moderating effects on the relationship between NCD and ICJV performance, project managers must choose appropriate conflict management styles in multinational teams. Thirdly, as the avoiding approach has no significant moderating effect on the negative relationship between NCD and ICJV performance, it is important for Chinese partners not to employ avoiding approach to deal with conflicts in ICJV.

**Originality/value** – This study uniquely adds to the literature on cultural issues in managing ICJVs by integrating the moderating effects of conflict management approaches. The interactive effects of conflict management approaches and national cultural differences on ICJV project performance may contribute to the theories regarding conflict management theory in the context of cross-cultural management.

**Keywords** Construction, Conflict management, Cultural differences, International joint venture, Project performance

**Paper type** Research paper



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المنارة للاستشارات

## 1. Introduction

Strategic alliance has become the dominant means of international businesses in the context of globalization (Albers *et al.*, 2016). As a special type of strategic alliance in the construction industry, the international construction joint ventures (ICJV), defined as temporary arrangements for carrying out projects with at least one partner headquartered outside the country of operation (Hwang *et al.*, 2017), have become a strategic choice for contractors seeking opportunities in the highly competitive business environment. However, ICJVs were reported to have a high failure rate due to high degree of instability and poor performance (Makino and Beamish, 1998; Parkhe, 1993). Moreover, culture issues have been frequently raised in ICJV research (Barkema and Vermeulen, 1997; Evans and Mavondo, 2002; Kogut, 1988; Morosini *et al.*, 1998; Ozorhon *et al.*, 2008; Park and Ungson, 1997; Vasilaki, 2011). Cultural conflicts, which are a common issue in multicultural organizations, may cause risks and negative outcomes to the organizations (Ozorhon *et al.*, 2008).

Previous studies have made tremendous efforts in exploring the relationship between culture differences and ICJV performance. However, previous research failed to reach a consistent conclusion regarding the relationship (Brouthers and Brouthers, 2001). Nielsen (2007) identified at least four aspects of negative effects of cultural differences (e.g. communication problems, partner firm's approaches to conflict resolution, managerial conflicts and eroding applicability of certain partner competencies) on international joint venture (IJV) performance. However, Ozorhon *et al.* (2008) identified constructive influences of national cultural differences in a Turkey-context study. Bener and Glaister (2010b) reported no relationship between the two variables in Western cultural background. Cultural differences may trigger extensive conflicts in technology, norms and emotion among the ICJV partners. Nevertheless, conflict in its nature can be constructive or destructive depending on how the ICJVs deal with the conflicts (Fellows and Liu, 2008). Although researchers have shown that the relationship between national culture difference (NCD) and IJV performance is correlated with conflict and conflict management styles (Bisseling and Sobral, 2011; Jiang *et al.*, 2016; Pak *et al.*, 2009; Vodosek, 2007), the interactive effects of cultural differences and conflict management approaches on international construction project performance are left unexamined.

Therefore, this study aims to address this gap by exploring the relationships between cultural differences, approaches of conflict management and performance of the multicultural project teams of ICJVs. The specific objectives are as follow: (1) to examine the relationship between NCDs and the performance of the multicultural project team of ICJVs and (2) to explore how each type of conflict management approaches impacts on this relationship. This study was conducted in the context of Chinese-involved ICJVs. This is because (1) huge demand for economic and infrastructure collaboration between China and countries in Asia, Europe and Africa will be generated by China's Belt and Road Initiative (also known as One Belt, One Road) which has since become a major focus for China's economic development (Cai, 2017) and (2) time constraints impede the development of a universal model to cater for all types of ICJVs.

The next section presents the theoretical basis of this study. The influences of cultural differences and conflict management approaches on ICJV project performance are discussed and the research hypotheses are developed based on the literature review.

## 2. Literature review

### 2.1 National cultural differences and ICJV project performance

As the result of globalization, intercultural human communication is increasing at both individual and organizational levels (Chen, 2005), which has inevitably caused and will continue to generate more conflicts in different situations (Yu and Chen, 2008). Notoriously, the major negative effects of cultural differences have been the clashes and conflicts stemming from the differences in perceptions, attitudes and tactics of the partner organizations. Previous research

studies on construction project management were focused on national culture issues, which is a critical component in IJVs (Avny and Anderson, 2008; Godfrey Ochieng and Price, 2009; Lahiri and Dhandapani, 2019; Li *et al.*, 2010; Lin and Berg, 2001; Liu *et al.*, 2016a; Ozorhon *et al.*, 2008; Pothukuchi *et al.*, 2002; Ren *et al.*, 2009; Sirmon and Lane, 2004). Cultural differences are functions of differences in societal values and communication styles that are rooted in culture (Lojeski and Reilly, 2008). It reflects the differences in the measure of values, norms among people and protocols in human behaviors (Kandogan, 2012). Therefore, the category of cultures has been separated into national, regional and organizational culture (Hofstede, 1991; Makhija and Ganesh, 1997; Pauluzzo *et al.*, 2013; Pothukuchi *et al.*, 2002). Some researchers (Erez and Gati, 2004; Fellows and Liu, 2008; Pratt *et al.*, 1993) also noted that organizational culture is nested in national culture of the organization's location. A firm's value is largely a reflection of its national culture (Bener and Glaister, 2010b). Thus, this study addresses the cultural differences at the national culture level as national culture is believed to have unconscious and deep-rooted influences on people's belief and behaviors.

According to the transaction cost theory, which was first proposed by Coase (1937) and then expanded by Williamson (1975) to explain the existence of enterprise, cultural distance can increase costs and uncertainty for IJVs (Larimo *et al.*, 2016). The theory states that the existence of enterprise, which was considered as an effective substitute for the market, can reduce transaction cost and achieve the maximization of profit (Coase, 1937). Transaction cost theory was used to explain the formation and development of IJVs. Ring and Van de Ven (1992) argued that when the cost of market transactions was relatively high and it was not necessary to establish the hierarchical organizations, the joint venture was considered as an optimal organizational model.

However, the cultural conflicts seem unavoidable even though the IJV organizational model is built. The underlying uncertainty due to cultural differences makes it costly to negotiate and transfer management practices and firm-specific technologies (Pothukuchi *et al.*, 2002). Brouthers (2013) argued that cultural differences lead to increased cost for information search and transaction. In the cross-cultural context, the greater the cultural differences are, the more diverse needs employees would have, thereby increasing the management costs for enterprises (Ruigrok and Wagner, 2003). Shenkar (2012) argued that the transaction cost will be higher for IJVs with higher degree of cultural differences. In addition, the environmental uncertainties of the host country may increase uncontrollable factors for investments. It is more difficult for enterprises to make predictions. The uncertainties make it hard to effectively assess the performance of the partnership; and the joint ventures cannot increase the discount power of the host country by signing a contract, which will lead to an increase in transaction costs (Chen and Hennart, 2004).

In a typical multinational alliance, ICJV partners with diverse cultural backgrounds tend to behave in different ways, which may cause misunderstandings and conflicts among the partners (Zhan and Chen, 2013). Thus, NCDs may impact on IJV performance through conflict (Ayub and Jehn, 2014; Pak *et al.*, 2009). Some researchers (Liu *et al.*, 2011; Nielsen, 2007; Sinesilassie *et al.*, 2017; Vaux and Kirk, 2018; Zhan and Chen, 2013) argued that conflicts and barriers in communications and management may cause decline in performance of IJVs.

Based upon these arguments, the first hypothesis was proposed:

*H1.* National culture differences have a negative effect on multicultural project team performance of ICJV.

## 2.2 National culture difference, conflict management approaches and ICJV project performance

As mentioned earlier, it is how conflicts and disputes are managed rather than the conflicts themselves that influence team outcomes and effectiveness (Tjosvold *et al.*, 2003). Effective

styles lead to conflict resolution, enhance work steadiness (Wu *et al.*, 2019) and improve the performance of multicultural project teams (Tabassi *et al.*, 2019). For ICJVs, the most common conflicts arise from national cultural differences (Zhao *et al.*, 2013). As indicated in the literature, national cultural boundaries often emerge on account of differences in national cultural backgrounds (Espinosa *et al.*, 2003; Levina and Vaast, 2008). These national cultural boundaries are one of the major sources of conflicts (Chan and Tse, 2003). For instance, Di Marco *et al.* (2010) reached the similar conclusion that differences in national-cultural backgrounds gave rise to national-cultural boundaries which led to assignment and knowledge system conflicts. Moreover, conflicts can be either constructive or destructive to project performance (Wu *et al.*, 2019), depending on how it is handled (Sullabi *et al.*, 2012).

Conflict management refers to that, through effective management strategies, managers can achieve the target of maintaining a certain level of task conflicts within intraorganization, while minimizing relationship conflicts and finally maximizing the constructive function of conflicts (Afzalur Rahim, 2002). Generally, conflict management has three typical approaches: (1) cooperative approach; (2) competitive approach and (3) avoiding approach (Tjosvold *et al.*, 2003). With the cooperative approach, team members would adopt mutual cooperation in pursuit of win-win results of the practice to meet the interests of all parties. Competitive approach represents situations where team members seek self-interest satisfaction in the process of conflict handling without considering the impact of disputes on others. Avoiding approach means that team members tend to escape or inhibit conflicts even with the awareness of the existence of conflicts.

*2.2.1 Cooperative approach.* This approach to conflict management aims to solve the problem with a satisfactory outcome, foremost for both (Ünsal Altuncan and Tanyer, 2018). When people take a cooperative attitude toward conflict resolution, they tend to solve common problems, share opinions with each other and listen to others' suggestions, efficiently resulting in a solution and a reduction in cost and time (Tjosvold *et al.*, 2003). Cooperative approach means individuals who value peers' abilities and options, leading to cooperative goal achievement and open communication in dealing with conflict (Tjosvold *et al.*, 2003), will have a long-term relationship with partner who may provide ability, options, as well as resource (Tabassi *et al.*, 2019). Furthermore, cooperative approach promotes compatible goals, fosters integrated, high-quality solutions to problems and makes partners to have more solid confidence in effective cooperation (Wong *et al.*, 2018). Thus it could help joint venture partners obtain mutual benefit so that joint venture performance will be promoted (Wong *et al.*, 2018). Although NCD leads to issue of communication, mutual understanding and long-term cooperation relationship (Lahiri and Dhandapani, 2019), which cause conflict in ICJV (Bisseling and Sobral, 2011; Pak *et al.*, 2009), cooperative approach could reduce the strength of negative impact of NCD on ICJV performance. Hence,

*H2(a).* The relationship between national culture differences and multicultural project team performance of ICJV becomes weaker with higher degree of cooperative approach (negative moderating effect).

*2.2.2 Competitive approach.* A competitive approach is assertive and uncooperative and also called dominating or zero-sum approach (Liu *et al.*, 2009). This approach could be described as a win-lose scenario (Tabassi *et al.*, 2019), in which one's successful goal attainment makes others less likely to reach their goals (Wong *et al.*, 2018). This assumption underlies the use of a competitive approach where discussants want to use the conflict to promote their goals at the expense of others' goals (Wong *et al.*, 2018). In addition, ineffective communication and one-sided, imposed decisions and fragmented relationships will be resulted by competitive approach (Tabassi *et al.*, 2019; Wong *et al.*, 2018). Moreover, adopting this kind of conflict management approach, the conflict often ends with undesirable results (Tabassi *et al.*, 2019). As NCD positively relate to communication, cooperation and conflict resolution between business partners (Vaara *et al.*, 2012) and aforementioned competitive approach undermines

communication and relationship between partners in ICJV, competitive approach to conflict management will strength the negative relationship between NCD and ICJV performance. Hence,

*H2(b).* The relationship between national culture differences and multi-cultural project team performance of ICJV becomes stronger with higher degree of competitive approach (positive moderating effect).

*2.2.3 Avoiding approach.* An avoiding approach is unassertive and uncooperative, and also called inaction or the ignoring style. It is characterized as having low concern for the self and for others and seeks actions that will serve to limit dealing with the conflict clearly, either by disregarding it or switching discussions to a new subject (Tabassi *et al.*, 2019). Avoiding approach will bring more negative results than facing the problem (Lu and Wang, 2017), caused by national cultural difference, and have negative impact on project performance (Barker *et al.*, 1988). From different cultural background, individuals are able to choose different conflict management styles. For instance, Friedman *et al.* (2006) found that Chinese people reported more conflict avoidance than Americans; and this cultural difference was partly associated with their higher concern for the other party and the belief that a direct approach would hurt their relationship. Because of intending to maintain relationships, some individuals prefer to adopt avoiding approach, which might, however, result in dysfunctional project team operation (Tabassi *et al.*, 2019). Hence,

*H2(c).* The relationship between national culture differences and multicultural project team performance of ICJV becomes stronger with higher degree of avoiding approach (positive moderating effect).

### 3. Research methodology

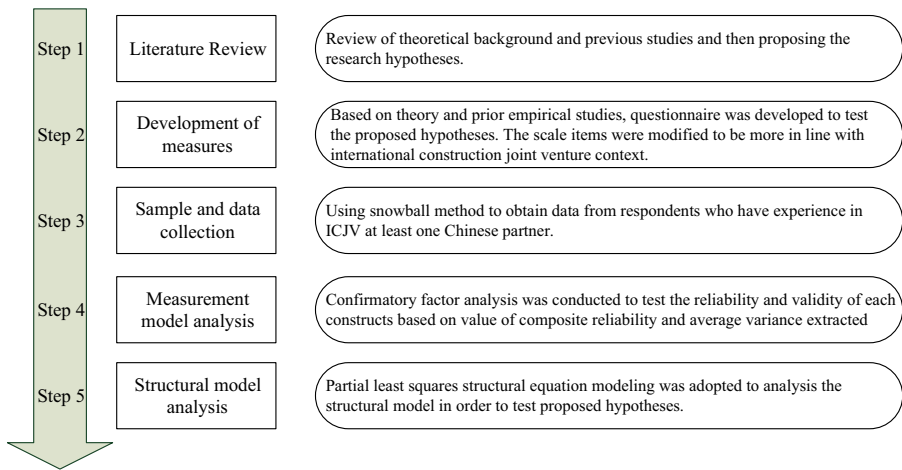
The research objectives and hypotheses of this study indicate that this is a correlational research study, which seeks to discover or establish the existence of a relationship between aspects of a situation (Feng *et al.*, 2014). The unit of analysis in this study was defined as a project performed by ICJV. The basic steps of this research are demonstrated in Figure 1. The ontological position with regards to the phenomena of this study was objectivism/realism. A positivistic approach was adopted to achieve the research objectives. We began with hypotheses that we logically derived from theories and literature review (Step 1 in Figure 1). Then, we logically linked the variables to precise measurements (Step 2 in Figure 1). We remain detached, neutral and objective as we measure the variables and examine evidence. These processes led to an empirical examination of the relationships between national cultural differences, conflicts management approaches and ICJV project team performance.

#### 3.1 Measures

Based on the research hypotheses, the research variables to be examined in this study include ICJV project performance, NCDs and conflict management approaches. The variables are measured based on established scales derived from the literature. The wording of some existing scales was adapted to fit the context of this study. All measurement items are reported in Table 2.

*3.1.1 ICJV project performance.* In the field of cross-border management, strategic alliance performance measurement has been an important issue (Xiu-qiong *et al.*, 2010). So far there seems to be no consensus on the measurement of the IJV performance (Chowdhury, 1992; Ozorhon *et al.*, 2010; Pothukuchi *et al.*, 2002). Anderson (1990) argued that the lack of a consensus and appropriate performance indicators is a major source of the controversy.

Figure 1.  
Research steps



The indicators of IJV performance can be divided into subjective and objective indicators (Ozorhon *et al.*, 2008). Objective indicators include financial criteria and operational measures. Nevertheless, due to the obstacles with regard to obtaining financial and operational data to measure IJV performance, using subjective measures could be used as an alternative. Subjective indicators mainly refer to the overall satisfaction (Geringer and Hebert, 1991), which is one of the most extensively used measures of ICJV performance (Choi and Beamish, 2004; Fey and Beamish, 2001).

Performance is often used as the critical indicator of success (or lack thereof) of construction organizations (Cheung *et al.*, 2013). Hence, it is suitable to measure performance of ICJV on the basis of project success; and in this research, the ICJV project performance is defined as the extent to which the project goals are accomplished in the management process of the ICJV project team.

Although there are numerous construction project success criteria, the most frequently used criteria in the construction project performance research are iron triangles, namely, schedule, cost and quality, which are traditionally considered as the key criteria for construction project performance (Anantatmula, 2015; Cheung *et al.*, 2013; Tabish and Jha, 2018; Wang *et al.*, 2013; Xia *et al.*, 2015). Accordingly, cost, schedule and quality were selected as the objective indicators to evaluate ICJV project performance. In order to measure ICJV project performance from both objective and subjective aspects, client satisfaction which was used by numerous researchers in the context of ICJV projects was selected as the subjective indicator to evaluate ICJV project performance (Bener and Glaister, 2010b; Lin and Ho, 2012; Mohamed, 2003; Ozorhon *et al.*, 2010). In this research, ICJV project performance is measured by respondents' perceptions of cost, schedule, quality and client satisfaction. As explained by Ozorhon *et al.* (2008), the main advantage of using respondents' perceptions of cost, schedule, quality and client satisfaction is "their ability to provide information regarding the extent to which the ICJV project has achieved its overall objectives (including financial, survival, or expansion objectives, or any objective as the case may be)" (p. 365).

3.1.2 National cultural differences. Hofstede (1980, 1991); Hofstede (1980); (Hofstede, 1991) dimensions (i.e. power distance, individualism, masculinity, uncertainty avoidance and long-term orientation) of national culture have been applied in many studies to measure the NCDs (Chen *et al.*, 2010; Drogendijk and Slangen, 2006; Shenkar, 2012; Vasilaki, 2011). Kogut and Singh (1988) applied Hofstede's initial four dimensions of national culture to produce a

Variable	Code	Measurements	Loadings	Cronbach's $\alpha$	CR	AVE
National culture difference (NCD)	ncd1	Difference of the home countries of the partners in terms of power distance (Power distance: it focuses on the degree of equality or inequality between people in a country's society)	0.76	0.692	0.880	0.595
	ncd2	Difference of the home countries of the partners in terms of individualism (Individualism: it focuses on the degree the society reinforces individual or collective achievement and interpersonal relationship)	0.81			
	ncd3	Difference of the home countries of the partners in terms of masculinity (Masculinity: it is referred to the extent the society supports or does not support the traditional masculine work role model of male achievement, control and power)	0.83			
	ncd4	Difference of the home countries of the partners in terms of uncertainty avoidance (Uncertainty avoidance: it implies the degree of tolerance for uncertainty and ambiguity within the society)	0.73			
	ncd5	Difference of the home countries of the partners in terms of long-term orientation (Long-term orientation: it indicates the level the society embraces or does not embrace long-term commitment to traditional, forward thinking values)	0.72			
Cooperative approach (COOP)	coop1	ICJV partners encourage a "we are in it together" attitude	0.77	0.887	0.886	0.609
	coop2	ICJV partners seek a solution that will be good for all of us	0.79			
	coop3	ICJV partners treat conflict as a mutual problem to solve	0.80			
	coop4	ICJV partners work so that to the extent possible we all get what we really want	0.77			
	coop5	ICJV partners combine the best of position to make an effective decision	0.77			

**Table 2.**  
Reliability and validity analysis results of constructs  
(continued)

Variable	Code	Measurements	Loadings	Cronbach's $\alpha$	CR	AVE
Competitive approach (COMP)	comp1	ICJV partners demand that others agree to their position	0.81	0.887	0.877	0.642
	comp2	ICJV partners want the other to make concessions but do not want to make concessions themselves	0.74			
	comp3	ICJV partners treat conflict as a win-lose contest	0.79			
	comp4	ICJV partners overstate their position to get its way	0.86			
Avoiding approach (AVOI)	avoi1	ICJV partners smooth over differences by trying to avoid them	0.89	0.919	0.920	0.792
	avoi2	ICJV partners seek harmony even at the expense of open discussion	0.88			
	avoi3	ICJV partners try to avoid discussing divisive issues	0.90			
Project performance (PP)	pp1	The project is implemented in accordance with the predetermined schedule and has realized the schedule target.	0.79	0.890	0.890	0.669
	pp2	The project meets the intended quality requirements, realizing the quality goal	0.87			
	pp3	The actual cost of the project is consistent with the planned cost, ended within budget.	0.80			
	pp4	The client shows satisfaction of the project	0.81			

Table 2.

Note(s): CR: composite reliability; AVE: average variance extracted

quantitative measure as an index. Some researchers (O'grady and Lane, 1996; Shenkar, 2012; Zhao *et al.*, 2004) suggested the use of individual level perceptual measures to assess national cultures and cultural differences because people's perceptions drive their strategic decision and behavior. Both the aggregate indices and individual perceptual measures were based on Hofstede's national culture dimensions (Hofstede, 1980, 1991).

In this study, national cultural differences were measured by the perceived national cultural differences of respondents because culture is a complex phenomenon and embodies a host of values, beliefs and norms, many of which are subtle, intangible and difficult to measure (Barkema and Vermeulen, 1997). As a result, the individual's perception and understanding of the differences between the individual's culture and a foreign culture forms the basis of cultural distance (Evans and Mavondo, 2002; O'grady and Lane, 1996). Some researchers (Ozorhon *et al.*, 2008; Bener; Glaister, 2010) utilized the subjective perceptions of respondents to evaluate the level of similarity between the IJV partners based on Hofstede's national culture dimensions. It is therefore reasonable to use subjective perceptions of respondents to evaluate the level of cultural differences between the ICJV partners. The items for the measurement of national cultural differences were taken from Ozorhon *et al.* (2008). The respondents were required to evaluate the similarity of each national culture dimensions between the ICJV partners.

3.1.3 *Conflict management approaches.* Scales of conflict management approaches were developed from a series of experimental studies and questionnaire studies (Alper *et al.*, 2000;



Barker *et al.*, 1988; Tjosvold *et al.*, 2003). Currently, the instrument for conflict management measures mainly consists of conflicts management survey, conflict management-of-differences instrument, organizational communication conflict instrument, conflict management message style and organization conflict inventory-II (ROCI-II) (Cornille *et al.*, 1999; Hall, 1969; Putnam and Wilson, 1982; Rahim, 1983; Ross and DeWine, 1988). Each instrument covers different approaches of conflict management.

The instrument for measuring conflict management approaches was adapted from Tjosvold *et al.*, 2003. The items were then aligned to project management in the ICJV context. The five cooperative approach items measured the emphasis on mutual goals, understanding everyone's views, orientation toward joint benefit and incorporating several positions to find a solution good for all. The competitive approach scale had four items with similar anchors to measure the assumption that the conflict was a win-lose situation and the use of pressure and intimidation to get others to conform to one's view. The three items for measuring the avoiding approach included avoiding divisive issues, smooth handling and public discussion of issues. Thus, based on the hypotheses and measurement, the conceptual research model was shown in Figure 2 and the details of measurement items for each construct can be found in Table 2.

### 3.2 Sample and data collection

The testing of hypotheses was based on a cross-industry sample of ICJVs involving at least one Chinese partner. The questionnaire survey method was used to collect data for this research. In the questionnaire, all items were measured by a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). 7-point Likert scales were adopted because: (1) the human mind has a span of absolute judgment that can distinguish about seven distinct categories, a span of immediate memory for about seven items and a span of attention that can encompass about six objects at a time, which suggested that any increase in number of response categories beyond six or seven might be futile (Miller, 1956), as cited in Colman *et al.* (1997); (2) Lewis (1993) found that 7-point Likert scales resulted in stronger correlations with *t*-test results and (3) Johns, 2010 confirms that data from Likert items (and those with similar rating scales) becomes significantly less accurate when the number of scale points drops below five or above seven. The questionnaire consists of three major sections. Section A collects information about respondents' profile including work experience, respondents' involvement in ICJV projects and positions. Section B aims to gather key parameters concerning the selected project including project type, location and investment. Section C asks the respondents to evaluate the constructs' items according to their experience. Prior to the collection of data, a pilot study was conducted with 18 academic and industry representatives to assess the constructs and scale items of the survey instrument. Wordings of some questions and terminologies were improved to avoid ambiguities and ensure the respondents had a good understanding of the questions.

Project management team members of ICJVs were considered as the target respondents in this research. The respondents were requested to complete an online survey based on their experiences in one of their completed ICJV projects involving a foreign partner. The respondents were selected through nonprobability sampling, which is appropriate when respondents are determined based on their willingness to participate in a survey rather than as a random selection from the entire population (Wilkins, 2011). This sampling approach was augmented by the use of the so-called snowball method, that is, respondent-driven sampling, in which respondents refer acquaintances who were also involved in management of ICJV projects to the research team (Liu *et al.*, 2017). Estimates calculated from the data from respondent-driven sampling are asymptotically unbiased (Zhai *et al.*, 2013). The initial participants were recruited through the professional networks of the researchers. The initial

participants were then requested to recommend other potential participants who they believed to have similar experiences to the research team. After evaluating the experiences of the potential participants, the researchers forwarded the survey link to the appropriate participants by email or WeChat (a popular social media and messaging app in China) so that they can complete the online survey. Out of the 500 potential participants contacted, 167 responses were received, representing an initial response rate of 33.4%. After screening problematic (e.g. incomplete questionnaires and same scores to all 5 consecutive measurement items) questionnaires, 143 valid responses were used for final analysis, thus yielding a response rate of 28.6%. Harman's single-factor test was examined to test common method variance after collecting data. The results show that no single factor accounted for the majority of the variance in the variables (factor 1 accounting for 36.5% of the variance). Thus, the questionnaire design process and the post hoc test suggest that the common method variance is a concern in this study. The response rate was considered acceptable compared to the normal response rate of 20–30% reported in research of similar type in the construction industry (Akintoye, 2000; Liu *et al.*, 2016b). The final sample for this study comprises general building, oil and gas, transportation, power, hydraulic and industrial plants-related projects, mainly located in Africa (58.7%) and Asia (28.7%). More detailed descriptive statistics of the profile of respondents and projects are reported in Table 1. Majority of the respondents (61.5%) have more than five years of work experience. Around half of the projects (47.5%) are large-scale project (>US\$ 200m). Most projects (83.9%) adopted loose pattern joint venture.

### 3.3 Data analysis methods

Partial least squares structural equation modeling (PLS-SEM) was adopted to test the research hypotheses. Generally, regression analysis was the most frequently used method to test moderated effects. However, the validity of regression analysis results is heavily affected by the underlying assumptions (e.g. normality, independence, linear and homoscedasticity). After the normality test of the data, it was found that the data of this study did not satisfy the normality assumption. In addition, the sample size of this research is relatively small (143 samples). Thus, PLS-SEM method was adopted because the PLS-SEM method is suitable for small sample size and skewed distribution (Reinartz *et al.*, 2009). SmartPLS version 2.0 was used to analyze the data. Before testing hypotheses, confirmatory factor analysis was conducted to test measurement reliability and validity.

## 4. Results

### 4.1 Measurement reliability and construct validity

Assessing the measurement reliability and construct validity involves determining indicator reliability, internal consistency reliability, convergent validity and discriminant validity (Hair *et al.*, 2011; Henseler *et al.*, 2016). As shown in Table 2, Cronbach's  $\alpha$  of cooperative approach (COOP), competitive approach (COMP), avoiding approach (AVOI) and project performance (PP) are higher than 0.7. It shows that measures of COOP, COMP, AVOI and PP are robust in terms of their reliability. Although Cronbach's  $\alpha$  of NCD is 0.692, it still above acceptance threshold value of 0.6 (Hair *et al.*, 2010). Moreover, the composite reliabilities (CR) of each construct are higher than 0.7. It fits the recommended threshold number of 0.70 given by Bagozzi and Yi, 1988. Finally, all factor loadings are higher than 0.5 cutoff (Joslin and Müller, 2015). It can be seen from Table 2 that all constructs' average variance extracted (AVE) are above 0.5. It indicates that NCD, COOP, COMP, AVOI and PP have good convergent validities based on the suggestion of Fornell and Larcker, 1981. To assess discriminant validity, comparing square root of AVE and correlation among constructs was conducted in this research. As shown in Table 3, the square root of each constructs' AVE is

Characteristics	Categorization	Number	Percent* (%)
Respondents' work experience	<5 years	55	38.5
	6–10 years	42	29.4
	11–15 years	33	23.1
	16–20 years	10	7
	>20 years	3	2.1
	Total	143	100
Number of projects completed as a partner of ICJV	1–3	13	9.1
	4–6	125	87.4
	7–9	4	2.8
	≥10	1	0.7
	Total	143	100
Designation	Senior manager	20	14
	Project manager	40	28
	General administrative staff members	58	40.6
	Technical personnel	9	6.3
	Other	16	11.2
Project type	Total	143	100
	General building	15	10.5
	Oil and gas	25	17.5
	Transportation	46	32.2
	Power plant	10	7
	Water supply	23	16.1
	Industrial plant	14	9.8
	Other	10	7
	Total	143	100
Project location	Europe	2	1.4
	Asia	41	28.7
	Africa	84	58.7
	North America	0	0
	Latin America	11	7.7
	Oceania	5	3.5
	Total	143	100
Project scale	<US\$ 50m	38	26.6
	US\$ 50m–100m	21	14.7
	US\$ 100m–150m	13	9.1
	US\$ 150m–200m	3	2.1
	>US\$ 200m	68	47.5
	Total	143	100
Joint venture pattern	Legal person	2	1.4
	Tight pattern (contract)**	9	6.3
	Loose pattern (contract)***	120	83.9
	Partnership	12	8.4
	Total	143	100

**Note(s):** \*Rounding-off error may have occurred; \*\* joint venture parties invest in liquidity and resources proportionally based on agreement, share the responsibility and losses proportionally, and assume joint responsibility for the owners; \*\*\* joint venture was divided into different parties according to profession and location. Each party is responsible for each part of the joint venture. Each party is solely responsible for the part it undertakes until it is completed. The lead company collects a certain proportion of coordination management fee

**Table 1.**  
Profile of respondents  
and projects

larger than its correlations with any other construct (except the correlation between competitive approach and project performance). Therefore, the discriminant validity is acceptable.

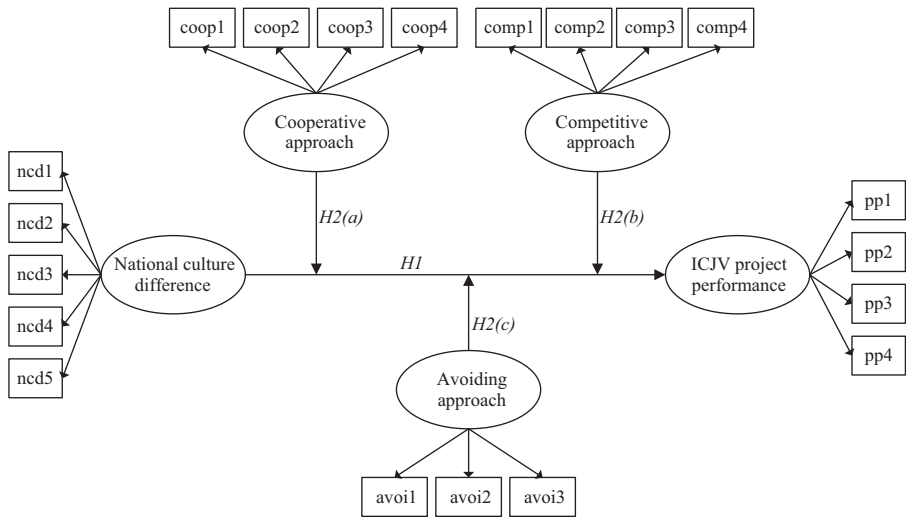
4.2 Structural model analysis

As shown in Figure 3, NCD has significantly negative effect on ICJV project performance ( $\beta = -0.313, p < 0.001$ ). Therefore, Hypothesis 1 was supported. To test the moderating effects of cooperative, competitive and avoiding approaches, the hierarchical process recommended by Chin et al. (2003) was adopted. Firstly, the baseline model without moderator was tested, as shown in Figure 3. The baseline model accounts for 9.8% of variance in ICJV project performance. Secondly, direct effects of the moderators were examined. As indicated in Figures 4(a)–4(c), R-square values of the cooperative, competitive and avoiding approaches were 0.641, 0.756 and 0.112, respectively. Finally, the moderating

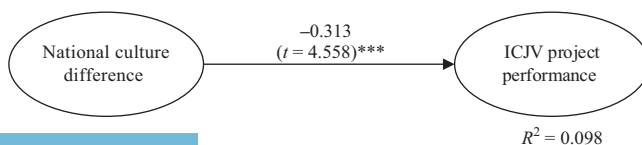
**Table 3.** Discriminant validity analysis results of constructs

Constructs	1	2	3	4	5
1. National culture difference	0.77				
2. Cooperative approach	0.767***	0.78			
3. Competitive approach	0.065	-0.384***	0.80		
4. Avoiding approach	0.059	0.141	-0.108	0.89	
5. Project performance	-0.246**	-0.698***	0.811***	-0.113	0.82

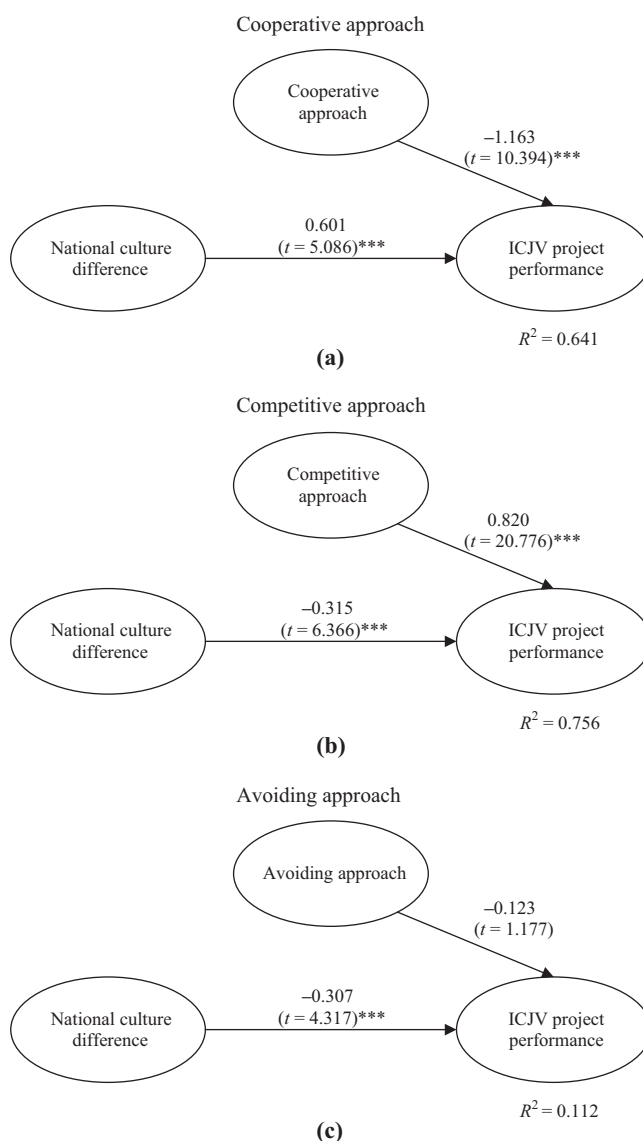
**Note(s):** \*means  $p < 0.05$ , \*\*means  $p < 0.01$ , \*\*\*means  $p < 0.001$ ; italic values represent square root of each constructs' AVE



**Figure 2.** Conceptual model

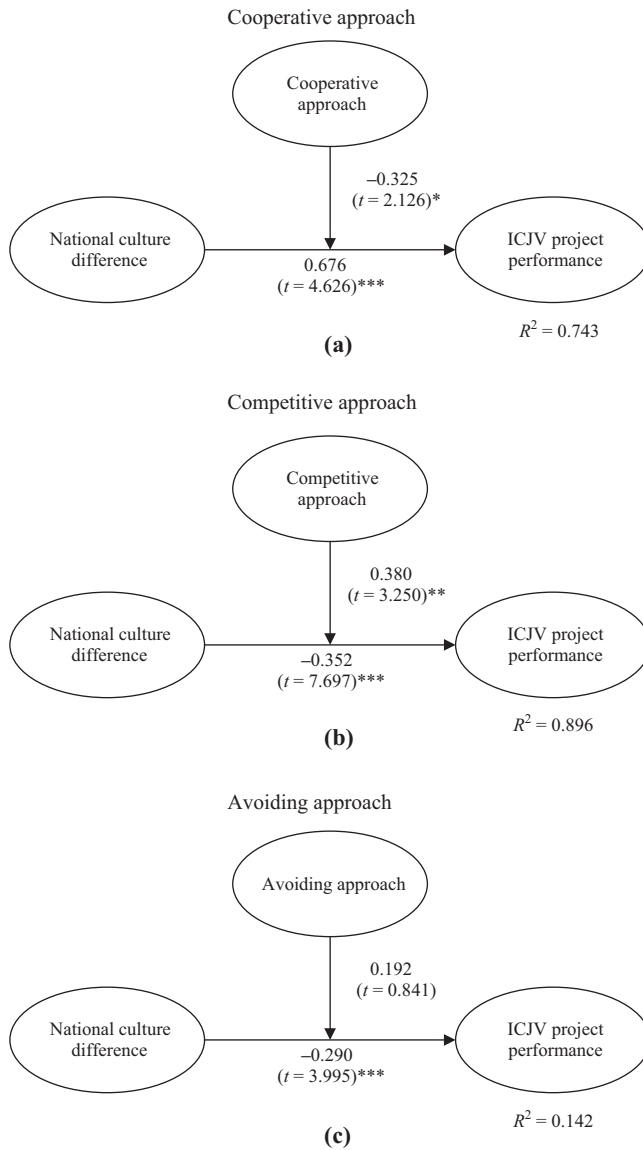


**Figure 3.** The baseline model (Model 1)



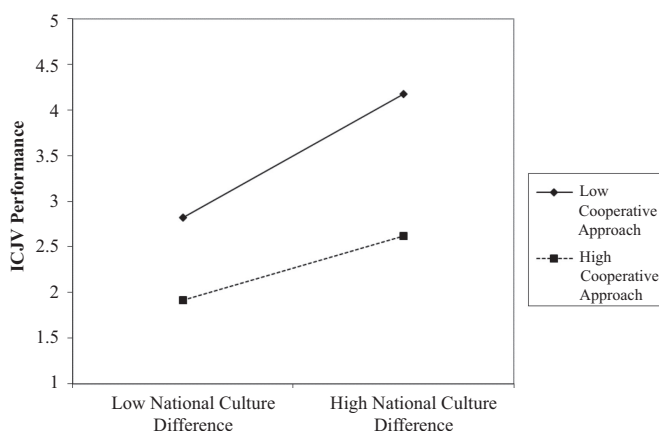
**Figure 4.**  
The direct effects of moderators

effects of cooperative, competitive and avoiding approaches were tested. The research results, synopsised in Figures 5(a)–5(c), demonstrated that the models account for 74.3% of the variance in ICJV project performance in the case of cooperative approach, 89.6% in the case of competitive approach and 14.2% in the case of avoiding approach. Based on the hierarchical difference tests, the interactive effects were found to have effect sizes  $f^2$  of 0.284 for cooperative approach, 0.574 for competitive approach and 0.034 for avoiding approach (Interaction effect size  $f^2 = [R^2 \text{ of interaction effect model} - R^2 \text{ of main effect model}] / [1 - R^2 \text{ of main effect model}]$ ). Based on (Cohen, 1988)'s suggestion, the difference in  $R$ -squares can

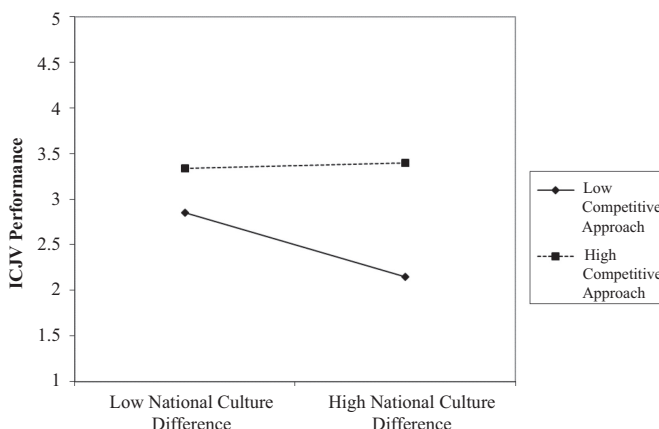


**Figure 5.**  
The moderating effects  
of moderators

assess the overall effect size  $f^2$  at three different levels: 0.02 ~ 0.14 for small effects; 0.15 ~ 0.34 for medium effects and above 0.35 for large effects. Therefore, the cooperative approach has medium interactive effects; the competitive approach has larger interactive effects and the avoiding approach has small interactive effects. Consequently, the models in which the cooperative and competitive approach were included as moderators had significantly higher explanatory power than the baseline model. The moderating effects of cooperative and competitive approach are shown in Figures 6 and 7. The hypotheses testing results are summarized in Table 4.



**Figure 6.** Moderating effect of cooperative approach on the relationship between national culture difference and ICJV performance



**Figure 7.** Moderating effect of competitive approach on the relationship between national culture difference and ICJV performance

Hypothesis	Results
H1: National culture difference → ICJV project performance	support
H2(a): National culture difference × Cooperative approach → ICJV project performance	support
H2(b): National culture difference × Competitive approach → ICJV project performance	support
H2(c): National culture difference × Avoiding approach → ICJV project performance	Not support

**Table 4.** Results of hypotheses testing

## 5. Discussions

### 5.1 Effect of national culture differences on ICJV project performance

The results of the baseline model (see Figure 3) show that the ICJV project performance was significantly and negatively related to national cultural differences. This finding is in line with previous research which also concluded that project performance was negatively influenced by national cultural differences (Hanvanich *et al.*, 2003; Lane and Beamish, 1990; Pothukuchi *et al.*, 2002; Sim and Ali, 2000; Sirmon and Lane, 2004). It is widely acknowledged that people with different cultural backgrounds tend to have different behavioral patterns. According to

Nielsen, 2007, at least four aspects of negative effects of cultural differences on IJV performance can be identified: (1) cultural differences can result in communication problems which may impede knowledge exchange and interorganizational learning; (2) it can influence partner firm's approaches to conflict resolution, which may adversely impact the whole operation in each phase; (3) it can cause managerial conflicts due to misunderstandings, which may lead to additional costs and schedule impact in construction projects and (4) it can erode applicability of certain partner competencies, which may reduce the potential benefits arising from cooperation (Park and Ungson, 1997). The main negative effects of NCDs have been assumed to be the clashes and conflicts (Vasilaki, 2011).

For the ICJV projects which are characterized by enormous investments, long period and huge risk, the partners' different thoughts on standards, techniques and even the treatment of conflicts, along with obstacles on communication and habits which are attributed to different national cultures may have detrimental effects on project performance. Thus, practitioners should pay enough attention to the negative influence of NCDs to ensure the project success.

It is however noteworthy that not all the previous studies agreed with the negative impact of national cultural differences on project performance. (Ozorhon *et al.*, 2008) identified constructive influences of national cultural differences in a Turkey-context study. Other researchers like (Bener and Glaister, 2010b); Bener and Glaister (2010a) reported no relationship between the two variables in Western cultural background. The inconsistency of findings reported in different studies may be explained by the two following reasons. Firstly, the inconsistent and ambiguous findings might be attributed to diverse conceptualization and measurement of culture differences (Shenkar, 2012). Secondly, as Pothukuchi *et al.* (2002) suggested, the inconsistent findings may be due to omission of moderating variables. Thus, some moderators may need to be considered when testing the relationship between NCD and ICJV project performance.

### 5.2 Moderating effect of conflict management approaches on ICJV project performance

The results of moderation analysis (see Figure 5) provide empirical evidence to support the Hypothesis 2(a) (i.e. cooperative approach has a significant negative moderating effect on relationship between NCD and ICJV project performance). The results suggest that adopting cooperative approach can mitigate the negative effect on ICJV project performance caused by national cultural differences. Wong *et al.* (2018) argued that cooperative conflict management could improve IJV performance via helping partners discuss their opposing ideas openly for mutual benefit. This is due to NCDs have an indirect effect on IJV performance through conflict (Pak *et al.*, 2009), and cooperative approach has a positive effect on team coordination (Tabassi *et al.*, 2019), which is helpful to deal with conflict causing by NCD. By adopting the cooperative approach, people are more likely to draw on the wisdom of the majority, look for a mutually satisfactory solution, minimize the adverse conflicts and maximize the positive function of conflicts.

However, the competitive approach was found to aggravate the negative impact of national cultural differences on ICJV project performance (see Figure 5(b)). This finding supports the Hypothesis 2(b) (i.e. the relationship between NCDs and multicultural project team performance of ICJV becomes stronger with higher competitive approach). This is consistent with Wong *et al.* (2018)'s result that venture partners were found to engage in competitive conflict management that in turn frustrated joint venture performance. With a competitive approach, ICJV partners tend to highlight their own profit that in turn leads to tough and close-minded discussions, deadlock debates and less-optimal solutions.

No significant moderating effect was found for the avoiding approach. Several possible reasons may explain this result. This is consistent with research of Lu and Wang (2017) and



Tabassi *et al.* (2019), who demonstrated that the impact of avoiding approach on relationship quality and team performance is not significant. In terms of the sample, the majority (83.9%) of joint ventures' projects were conducted in a loose pattern (see Table 1). Furthermore, the project realization is undertaken by ICJVs, a temporary multiple alliance (Fellows and Liu, 2008). The ICJV members operate a project depending on objectives of tasks and foster self-oriented and opportunistic behaviors. According to conflict management theories, despite the negative effect of conflicts, productive outcomes such as improved relationships (De Dreu and Van de Vliert, 1997), more effective task completion (Amason, 1996) and more creative problem-solving and innovation (Yu and Chen, 2008) can be achieved if the conflicts are managed effectively. The avoiding approach can help to reduce relationship conflicts in short term but go against problem-solving in the long term. Previous studies found that a certain extent of task conflict could promote performance (Amason, 1996; Jehn, 1995) but the relationship conflict would have a suppressive effect on performance (Hanke, 2005). Interpersonal friction can lead to anxiety and influence the cognitive process, thus affecting team members' performance and resulting in a reduction of organizational effectiveness. A certain degree of task conflict can make good use of advantages of brainstorming. For instance, with good techniques such as equipment selection, conflicts may not necessarily be destabilizing to the ICJV but rather lead to cost saving to all parties involved. On the other hand, forcing and domination may result in relationship conflict and therefore generate less satisfaction for at least one of the partners (Lung-Tan, 2007). The negative effect may partly offset the positive effect. Moreover, some researchers have depicted Eastern culture as collectivist with high power distance, which seems to be the catalyst for rapid changes in certain behaviors (Fellows and Liu, 2008). Although avoiding approach is frequently used by Chinese to manage conflicts, it is ineffective to reduce the negative effect of NCDs on ICJV project performance. Hence, the approach of conflict resolution of Chinese partners should be switched from the avoiding style to the cooperative style which is effective in handling conflicts in ICJVs.

## 6. Conclusions

This study explored the relationships among national cultural differences, conflict management approaches and performance of ICJVs involving Chinese partners. It was found that performance of international Chinese-involved construction joint ventures was negatively related to the degree of national cultural differences. The results of structural equation modeling analyses revealed that adopting cooperative conflict management approach can mitigate the negative effect of NCDs on ICJV project performance; while the adoption of competitive approach will aggravate the negative impact of national cultural difference on ICJV project performance.

The results offer some valuable practical implications for the management of ICJV projects involving Chinese partners. National cultural differences are always recognized as an important factor influencing the performance of a multicultural team. As NCD negatively impacts performance of ICJVs, project managers should pay attention to cultural issues and learn how to manage them. The findings of this research imply that the negative impact of national cultural differences on ICJV project performance can be significantly mitigated by adopting the cooperative conflict management approach, while aggravated by employing competitive conflict management approach, project managers must choose appropriate conflict management styles in multinational teams. As avoiding approach has no significant moderate effect on the negative relationship between NCD and ICJV performance, it is important for Chinese partners not to employ avoiding approach to deal with conflicts in ICJV. These findings are especially important considering the growing interconnections brought about by globalization process.

This study may provide several theoretical insights into the management of the multinational alliances in the construction industry. First, this study examined the relationship between national cultural differences and ICJV project performance in the context of Chinese-involved ICJV projects; while previous studies which examined the relationship between national cultural differences and ICJV project performance were mainly conducted in the Western context. Second, this study uniquely adds to the literature on cultural issues in managing ICJVs by integrating the moderating effects of conflict management approaches. Third, the interactive effects of conflict management approaches and national cultural differences on ICJV project performance may contribute to the theories regarding conflict management theory in the context of cross-cultural management.

While these results may help to understand the intrinsic relationship between national cultural differences and the ICJV project performance, several limitations of this research are discussed.

The first limitation lies in the generalizability of the research findings. All the data were collected from ICJVs formed by at least one Chinese partner. As noted in [Table 1](#), the majority (87.4%) of data were collected from the projects located in Africa and Asia. This is largely due to the nature of market share of Chinese contractors in overseas construction markets. Moreover, the ICJV projects included in this study only involved partners from two different national cultures. It is suggested that, in future studies, it is worthwhile to explore the ways of measuring differences of three or more different national cultures and investigate the impact of national cultural differences on ICJV project performance in other contextual backgrounds such as different countries, domains and ICJV patterns to reach a more generalizable conclusion.

The second limitation concerns the single-region sampling method. It is possible that the national origin of the participants is correlated to their preferences for the conflict management approaches. In a future study, it would be interesting to test whether people from different national cultural backgrounds have different preferences for conflict management approaches.

The third limitation concerns the explanation power of the research findings. It is acknowledged that the explanation of the relationship among variables would be more incisive if qualitative data (e.g. observations, case studies and in-depth interviews) were collected ([Feng et al., 2014](#)). Future studies may be conducted using case studies and in-depth interviews to investigate why and how cultural differences impact on the management and performance of ICJV projects. The validity of the relationship among the variables may also be boosted by collecting data from multiple sources.

The last limitation lies in the mechanism of how NCD impact ICJV performance is still unrevealed. ICJV performance may be influenced by various other factors that are not limited to NCDs and conflict management approaches. In a future study, it would be interesting to examine the relationship between national cultural differences and ICJV project performance by considering various other potential moderators and mediators and constructing a more comprehensive model such as moderated mediation or mediated moderation model.

## 7. Data availability statements

The research data will be made available on request.

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### Corresponding author

Yingbin Feng can be contacted at: [y.feng@uws.edu.au](mailto:y.feng@uws.edu.au)

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