Available online at www.sciencedirect.com

ScienceDirect

International Journal of Project Management 33 (2015) 564 – 575

International Journal of Project Management

www.elsevier.com/locate/ijproman

An exploratory study of understanding project risk management from the perspective of national culture

Junying Liu [a], Fanye Meng [b,*], Richard Fellows [c]

[a] Department of Construction Management, Tianjin University, Tianjin, China
[b] Department of Financial Management and Supervision, State Tobacco Monopoly Administration, Beijing, China
[c] School of Civil and Building Engineering, Loughborough University, LE11 3TU, United Kingdom

Received 19 December 2013; received in revised form 13 July 2014; accepted 11 August 2014
Available online 6 September 2014

Abstract

Cultural influence is unavoidable in construction projects and a clear understanding of it is vital for successful risk management. This study aims to explore how culture influences contractors' risk management. A case study method is selected including four projects in China, Poland and Singapore. Data are collected through interviews and archival documents. Major risks are identified and risk management in each case is discussed in the context of Hofstede's theory. A conceptual framework is proposed to reveal the link between culture and risk management. The findings show that project risks are perceived and managed differently in different national cultures. It is indicated that *IDV* and *UAI* are the foci of attention, beyond the contributions of *PDI*, *LTO* and *MAS*, and that contractors' knowledge of the host country's national culture influences their risk management behaviors. Having such information is of great importance to improve international contractors' risk management practice.

Keywords: Risk; National culture; Construction projects

1. Introduction

Implementing projects in a foreign country is a high risk business activity (Zhang, 2011). In addition to the risks involved by a project's nature (Zwikael and Ahn, 2011), many factors pose challenges to international contractors: (1) different legal, social and cultural systems which are less familiar to the contractors (Liu and Wu, 2008); and (2) participants from diversified cultural backgrounds which lead to potential conflicts and impacts on construction progress (Hu et al., 2011).

Different societies have different patterns of response to the problems of social life (Hofstede et al., 2010), which are rooted in cultural differences. Culture impacts economic performance (Casson, 1993), and has become a mainstream topic of interest within the construction industry over the last decade (Fellows, 2010). Cultural issues are expected to cause conflicts among parties and increase difficulties with project management (Chan and Raymond, 2003; Fellows et al. 1994), rendering the international contractors maladjusted and project performances unexpected (Hu et al., 2011). Essinger and Rosen (1991) define risk as "a measure of the anticipated difference between expectations and realizations", thus, culture affects the way a risk is perceived and operationalized in projects (Zwikael and Ahn, 2011).

However, as yet the study of culture is nascent; cultural processes and the consequences of/on culture are not well understood (Fellows and Liu, 2013). We thus set up an exploratory study to explore the role of culture impacts on contractors' risk management. Seeking out the answers to the questions below would be of help in shaping the relationship and planning further strategies:

(1) How does culture influence risk management?

* Corresponding author at: Department of Financial Management and Supervision, State Tobacco Monopoly Administration, 55 Yuetan South Street, Xicheng District, Beijing 100045, China. Tel.: +86 18518314427.
E-mail addresses: liujunying@tju.edu.cn (J. Liu), mengfanye2013@163.com (F. Meng), R.Fellows@lboro.ac.uk (R. Fellows).

http://dx.doi.org/10.1016/j.ijproman.2014.08.004
0263-7863/00/

(2) How can knowledge of such issues be helpful to contractors?

A case study of four different projects executed by two Chinese contractors in China, Poland and Singapore is selected and Hofstede's theory is used to assist the exploration.

2. Culture and risk management issues: national or organizational?

Culture could be defined as "the collective programming of the mind which distinguishes the members of one group or category of people from another" (Hofstede, 2008, p. 9). Such definition is applicable in both national and organizational levels. Previous cross-cultural research addressed the management issues and linked the problems to cultural differences. Hu et al. (2011) identify three levels of culture that would influence the contractor's risk management – national, organizational and individual – and they also explain their thoughts on individual culture that it consists of the professional ethics, language differences and mutual recognition between local and contractor's laborers. As such it can be viewed as sub-culture and can be classified into organizational culture. Therefore, as the "culture spectrum" announced by Fellows and Liu (2013), the likely impacts of culture will be addressed below by examining the two aspects – organizational and national cultures.

2.1. Organizational culture

Organizational culture is emphasized to develop appropriate infrastructure and capability to manage risks (Cheung et al., 2011). It is the basis of other works in the organization and is a principal aspect of an organization's function. Previous studies show that the effect of the culture in which the company operates is very significant, and argue that there are different influencing cultural factors. Liu et al. (2013) indicate that the corporate culture influences the enterprise risk management (ERM), and then influences the project risk management (PRM). Summerill et al. (2010) find that organizational culture is proactive in improving risk management in safety areas. In the transnational projects, however, different organizational cultures (even from different nations) are mixed and cultural difference exposes. Joint venture (JV) is often highlighted to cover the distance. In the JV, each firm is embedded in its home country culture, and the JV unit is embedded in the local, operating environment of the host country culture. Differences in organizational culture differentiate JV partners' risk and management practices (Ozorhon et al., 2008). Park and Ungson (1997) note that partners with dissimilar organizational cultures would expend time and energy to establish mutually agreeable managerial practices and routines to facilitate interaction, which would incur higher costs and more mistrust than partners with similar organizational cultures. Meanwhile, in the case study of an international JV in Hong Kong, Liu and Fellows (2008) find that the organizational cultures of the parent companies are consistent with their own national culture characteristics but the JV organizational culture is highly influenced by the dominant national culture of the management team. Their statements reinforce the viewpoints of Kogut and Singh (1988) that organizational cultures are embedded in their national culture, and differences in national culture have been shown to result in different organizational and administrative procedures and employee expectations. The national culture theories and its impacts are discussed in the next section.

2.2. National culture

Differences in national cultures call for differences in project management, including the diversity of concepts (Chen et al., 2009), management styles (Zwikael et al., 2005) and the deployment levels (Bredillet et al., 2010). Such differences are all influencing the effectiveness of risk management. Empirical studies show that the practitioners' risk management differ across nations and can be attributed to the diversity of national culture. For instance, Weber and Hsee (1999) find that respondents' risk preference vary among western and eastern countries through psychological experiences; de Camprieu et al. (2007) provide evidence that such differences are influenced by the cultures; and Zwikael and Ahn (2011) emphasize that the national culture impacts the intensity of risk management process.

Various cultural dimensions can be found according to which societies differ from one another (Hofstede et al., 2010). Trompenaars and Hampden-Turner (1997, p. 29) advance five value-oriented dimensions of culture: universalism/particularism (rules/relationships), collectivism/individualism (group/individual), neutral/emotional (expressions of feelings), diffuse/specific (degree of involvement), and achievement/ascription (method of giving status); and add attitudes to time and the environment. Another large-scale application of the dimensions paradigm is the project GLOBE, conceived by Javidan and House (2001). Nine critical cultural dimensions are identified — performance orientation, future orientation, assertiveness, uncertainty avoidance, power distance, collectivism, family collectivism, gender differentiation, and humane orientation. They are aspects of a country's culture that distinguish one society from another and have important managerial implications. Meanwhile, five of the dimensions in GLOBE are considered to be similar to those uncovered in Hofstede's theory. Hofstede (1980) initially contended that there are four dimensions of national culture — power distance (*PDI*), individualism/collectivism (*IDV*), masculinity/femininity (*MAS*), and uncertainty avoidance (*UAI*), and then updated and extended with a fifth dimension (long/short-term orientation, *LTO*) (Hofstede, 2001), and a sixth (indulgence/restraint, IVR) (Hofstede et al., 2010a). Each of these terms existed already in the social sciences, and they apply reasonably well to the basic problem area each dimension stands for (Hofstede and Hofstede, 2005, p.24). As IVR has been incorporated only recently and not used very widely, definitions of only the first five dimensions are provided:

> *PDI*: The extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally (Hofstede and Hofstede, 2005:46).

IDV: The extent to which individuals are integrated into groups. Individualism: societies in which the ties between individuals are loose; collectivism: societies in which people are integrated into strong, cohesive in-groups (*ibid*: 76).
MAS: The distribution of emotional roles between the genders. Masculinity: societies in which social gender roles are clearly distinct; femininity: societies in which social gender roles overlap (*ibid*: 120).
UAI: The extent to which the members of a culture feel uncomfortable by uncertain or unknown situations and try to avoid such situations (ibid: 167).
LTO: Long-term oriented societies: foster pragmatic virtues oriented towards future rewards; short-term oriented societies: foster virtues related to the past and present (ibid: 222).

As all the dimensions are quantified using the Value Survey Module (VSM), whose scores range 0–100, each country in this model is characterized by a score on each dimension (although not always using all dimensions). Cultural differences among nations thus can be distinguished clearly. In addition, Hofstede et al. (2010a) have proved that their theory could also be used in analyzing organization cultures. In this paper we determined to use Hofstede's paradigm to explore the cultural impacts on international contractors' risk management.

However, we recognize that the model is also criticized considerably (Hampden-Turner and Trompenaars, 1997; McSweeney, 2002; Signorini et al., 2009; Williamson, 2002). Most of the criticisms are that: (1) nations are unsuitable units for studying culture; (2) the number of dimensions found is insufficient to depict the richness of cultures; and (3) culture would change as time goes on. After considering these questions seriously, it is concluded that such criticisms will not have much effect on this study, with the reasons below. First, the subject of this study is "international projects", where nations are suitable to be taken as studying units. Second, although we recognize the dimension number is small, Hofstede's model remains effective and is widely accepted in management fields (Kanagaretnam et al., 2011; Keillor et al., 2009; Meng, 2013; Shore and Cross, 2005). Previous studies demonstrate that all five dimensions have correlative links with risks in many industries. For example, with the use of Hofstede's theory Meng (2013) indicates that all the five dimensions influence contractors' risk management. Rees-Caldwell and Pinnington (2013) find a positive relationship between project risks and a country's *PDI*; Kanagaretnam et al. (2011) and Li et al. (2012) indicate that more risks could be taken in high *IDV* societies; Das and Teng (2001) suggest that a top management team with a distant-future orientation will tend to manage low relational risk in an alliance relationship. Finally, we accept the viewpoint which was announced by Hofstede (2001) that culture would not be changed unless there is an extremely dramatic external event or through a long period of time. Hence the data quoted from Hofstede et al. (2010a) are seen as valid.

Findings show that Hofstede's theory can be used in this paper. However, through previous research, some paradoxes are found. According to Simon and Vidot-Delerue (2006), *MAS* has a positive effect on perceiving encroachment risks among biotechnology firms, while Bredillet et al. (2010) find that *MAS* has nothing to do with risk management; *UAI* is found related to corporate risk taking in many areas (Griffin et al., 2009; Kanagaretnam et al., 2011; Kreiser et al., 2010; Li et al., 2012), but Rees-Caldwell and Pinnington (2013) announced the opposite. Such paradoxes would make this research meaningful. Subsequently, many of them do not distinguish the firm's organizational culture from the national culture. For example, Kreiser et al. (2010) find that the national culture correlates to the risk-taking and proactiveness in SMEs. As their respondents are from 13 mixed industries, their findings may ignore the industrial culture impacts. Therefore, it is necessary to design the research method to minimize any impact of organizational culture.

3. Cultural background: China, Poland and Singapore

Three national cultures are selected for investigation in the case studies: Chinese, Polish and Singaporean. Each of the countries has a stable environment for development during the last decade, without "extremely dramatic outside events" (Hofstede, 2001) such as wars, invasions, etc. Thus their cultures can be regarded valid for Hofstede's theory, and the dimension scores listed by Hofstede et al. (2010a) can be used as reference. Their national culture dimension scores are shown in Fig. 1.

It is indicated that cultures of these counties are different. Chinese culture is similar to Singaporean culture in score but different from that of Poland. Subsequently, the behaviors of the local people in these countries could be expected to broadly comply with the features described in Table 1, which could be considered as guidance on studying the cultural characteristics. However, as the features are categorized by two degrees – low and high – but not by scores, such guidance is not clear enough to show the specific features of each dimension.

Previous research has evidenced that people's behaviors are consistent with the analysis provided by Hofstede's cultural dimensions. Chinese culture has been seen with its unique features influencing the management activities. It has evolved for over 5000 years and been influenced by Confucianism, Taoism and Buddhism, which act together to produce a culture that is hierarchical, holistic and group orientated (Kwan and Ofori, 2001). It matches the descriptions of Hofstede's cultural dimensions. Hierarchy is found consistent with Chinese high *PDI* by Kirkbride et al. (1991). A typical phenomenon is that when a dispute arises between superior and subordinate, natural deference to authority will lead to the subordinate accommodating the superior's wishes. The holism is derived from features of high *LTO*. Kubátová (2012) mentions that the Chinese approach a situation as a whole and address it in all possible contexts from various points of view. Such statement is the same with synthetic thinking posited by Hofstede et al. (2010, p. 251). Actually *LTO* is summarized from Chinese Value Survey (CVS). Group orientation stated by Kwan and Ofori (2001) is the same as collectivistic orientation (low *IDV*). Low (1998) notices the phenomenon that Chinese collective responsibility stems from the tradition of distrusting formal

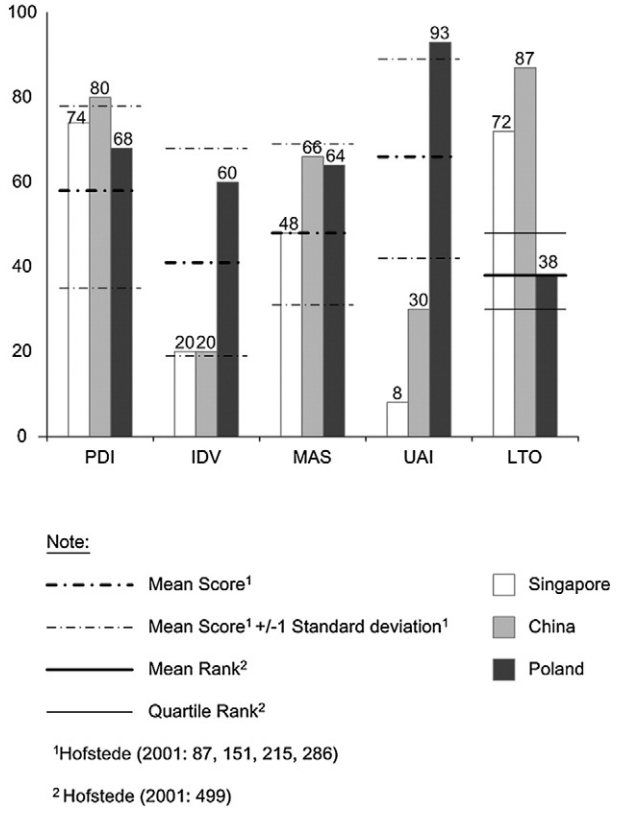

Fig. 1. National culture dimension scores of China, Poland and Singapore (Source: Hofstede et al., 2010, p. 57–58, 96–97, 141–142, 192–194, 255–257).

rules and regulations, and a dislike of written contracts, both emphasizing ethical rather than legal norms of conduct. In addition, the most influential features of Chinese culture in international business are guanxi and mianzi (face). Guanxi refers to "the status and intensity of an on-going relationship" (Kirkbride et al., 1991). Cordial guanxi is necessary in ensuring that Chinese business networks operate reliably (Kwan and Ofori, 2001). The Chinese devote considerable time to establishing guanxi (Davies, 1995), and such behaviors are consistent with the analysis provided by Hofstede's cultural dimensions. Guanxi is considered related to low *IDV* (collectivistic) (Kirkbride et al., 1991) and high *LTO* features (Hofstede et al., 2010, p. 251). Mianzi (face) represents respectability, reputation and pride. Face-saving behavior ensures harmony (Kwan and Ofori, 2001), and disturbing the group (interpersonal) harmony is shameful (Kirkbride et al., 1991). Kubátová (2012) notices that the Chinese will never give others an explicitly negative answer but an evasive one to suggest hope for a positive outcome and maintain their face. It is the reason why Chinese prefer mild conflict handling styles such as avoidance or compromise (Tjosvold and Sun, 2002). Mianzi is closely tied to guanxi, which also needs time to maintain it, and is attributed to *LTO* (Kubátová, 2012) and *IDV* (Kwan and Ofori, 2001).

Previous studies also discuss the cultural behaviors of Singapore and Poland. Liu (2008) accesses the core value and beliefs of Singaporean culture and finds that it has similar characteristics as (also influenced by) Chinese culture, such as hierarchical relationship and collectivism. Low and Shi (2002) retest the Singaporean and Chinese cultures via the scales of Hofstede (1980), and find different scores from the official ones, mainly due to the restriction of respondents (43 for China and 41 for Singapore). Nasierowski and Mikula (1998) explore the Polish culture in accordance with Hofstede's dimensions. They find that Polish managers tend to avoid consultations with subordinates and employees are afraid to disagree with their superiors (high *PDI* feature), and Todeva (1999) attributes the *PDI* features to Polish Catholic beliefs.

Preview studies demonstrate that Hofstede's national culture theory could be applied in explaining the behaviors. Thus it could help us study the cultural influences on risk management via case study approach.

4. Case study

The use of case studies is appropriate when researchers ask "how" or "why" questions in an attempt to collect empirical data to build externally valid and reliable theory (Yin, 2009). In this paper a comparative case study method was conducted (as shown in Fig. 2 to facilitate analysis at the ecological level —

Table 1
Brief behavioral features of Hofstede's five culture dimensions[a].

	Low	High
PDI	Decentralized decision structures	Centralized decision structures
	There is interdependence between less and more powerful people	Less powerful people should be dependent on the more powerful
	All should have equal rights	The powerful have privileges
IDV	Relationship prevails over task	Task prevails over relationship
	Management is management of groups	Management is management of individuals
	Collective interests prevail over individual interests	Individual interests prevail over collective interests
MAS	Stress on equality, solidarity, and quality of work life	Stress on equity, competition among colleagues, and performance
	International conflicts could be resolved by negotiation and compromise	International conflicts should be resolved by a show of strength or by fighting
UAI	Uncertainty is a normal feature of life and each day is accepted as it comes	Anything that could be structured should not be determined by contingency
	Comfortable in ambiguous situations and with unfamiliar risks	Acceptance of familiar risks; fear of ambiguous situations and of unfamiliar risks
LTO	Quick results expected	Persistence, perseverance
	Concentration on profit and loss	Concentration on market position
	Personal loyalties vary with business needs	Guanxi, investment in lifelong personal networks
	Analytical thinking	Synthetic thinking

[a] Source: Hofstede and Hofstede, 2005; Hofstede, 2008; Hofstede et al., 2010.

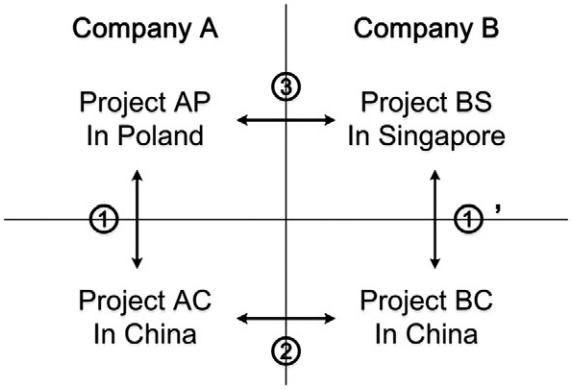

Fig. 2. 2 * 2 matrix of case study framework.

national culture). If two or more cases support the same theory, then replication can be claimed (Yin, 2009).

4.1. Research method design

Previous studies show that both organizational and national cultures could influence contractors' risk management. Thus, the key issue to seek out the influence of national culture is how to separate the impacts of contractors' organizational culture. A 2 * 2 matrix framework was then designed to achieve this objective, as shown in Fig. 2. Two Chinese construction companies were selected as the sample for this research. Each of the companies has over 300 thousand employees and over 40 subsidiaries around the world, both have their headquarters located in Beijing. Both of the companies are also on the list of the "top 225 global contractors" of Engineering News Record (ENR) (Reina and Tulacz, 2012). Thus the two companies could be regarded as representative. In each company, two projects were selected; one in the Mainland and the other abroad. Company A had no projects in Singapore and Company B had no projects in Poland before.

To achieve the paper goals as well as minimize the interference of organizational culture, a series of analysis steps have been brought in this research shown as the serial numbers in Fig. 2. The cases would be compared by pairs:

Step 1: AC vs. AP and Step 1′: BC vs. BS. In each step, the overseas projects would be compared with the domestic one in the respective organizational culture. They were intended to see whether or not risk management in China and overseas projects differed. Such differences could be attributed to the impacts of national culture differences. Step 1 and 1′ are designed to separate the effects of national culture independently.

Step 2: AC vs. BC. The two Chinese projects would be compared under different organizational cultures. They were intended to see whether or not risks perceived in the two domestic projects differed. As both the cases are under the same national culture, such differences could be attributed to the impacts of organizational culture differences.

Step 3: AP vs. BS. The two overseas projects would be compared with each other. With the results of Step 1, 1′ and 2, Step 3 aims to see whether or not risks perceived in the two overseas projects differed. Such differences could be attributed to the combination of national and organizational culture differences.

4.2. Data collection

Case studies allow the utilization of multiple data collection methods, including direct observation, document analysis, and in-depth interviews (Yin, 2009). In this study, direct observation was not adopted because the projects had been completed. Archival research was very limited because the companies were not willing to offer documentations due to business confidentiality. Therefore, most of the data were collected through interviews, because (1) probing questions were involved; (2) respondents were required to provide in-depth answers; and (3) particularly interesting aspects of the responses could be investigated further (Ling and Bui, 2010).

The interviews were carried out via face-to-face, telephone and video software approaches, and follow-up interviews were conducted through e-mails. Each interview took about one hour, and was undertaken in a semi-structured manner. After participants gave a brief introduction about their projects, primary questions were asked, and then additional questions added as appropriate. Some of the primary questions are listed below. Among them, questions numbered (1) to (3) are about risk and risk management in each project; questions numbered (4) and (5) are about risk management and cultural differences; others are about cultural differences perceived:

(1) What are the major risks identified in the project?
(2) Do these risks cause any losses? How serious are the losses that they cause?
(3) How do you/your team manage these risks?
(4) Are there any differences when managing a specific risk/risks abroad compared with those in China? What are they?
(5) What risks do you think are influenced by the cultural differences with the locals?
(6) Do you feel strange/curious/confused about the locals' thoughts/behaviors? What are they?
(7) How do you describe the local culture?
(8) Do you feel that guanxi influences your effectiveness in risk management? What about mianzi?
(9) Are there any linguistic problems?

During the interview, Hofstede's dimensions and their behavioral features (represented in Table 1) were also mentioned during the interview to help classify cultural features.

The interviewees were people directly concerned with the project, so that their responses could be based on first-hand knowledge rather than hearsay. At first, the project managers (senior manager in the case of AP) were interviewed, and then they were invited to introduce other members of their project team to finish the interviews. At last 25 participants were interviewed, 13 from Company A and 12 from Company B. The details of the participants are shown in Table 2. They held significant positions in the project team and were thus suitable

Table 2
Detailed information of interviewees and archival documents.

Cases	Interviewee (code)	Main role in the project	Archival document
AP	AP1	Senior manager	Company website
	AP2, AP3, AP4	Construction engineer	
	AP5	Documentation manager	
	AP6, AP7,	Quantity surveyor	
AC	AC1	Project manager	Company website
	AC2, AC3	Construction engineer	
	AC4, AC5	Quantity surveyor	
	AP6	Technical specialist	
BS	BS1	Project manager	Company website
	BS2	Procurement manager	
	BS3, BS4, BS5, BS6	Construction engineer	
BC	BC1	Project manager	Company website
	BC2	Site manager	
	BC3, BC4, BC5	Construction engineer	
	BC6	Quantity surveyor	

for this study. The diversity of the interviewees (from manager to engineer) in each case ensures representativeness. To reduce the bias, each project had at least 5 interviewees, and their views had been recorded and cross-checked to guarantee the data authenticity.

4.3. Data analysis

A content analysis technique was used. This was undertaken by dividing the interviews according to a certain number of identified themes. In this initial stage of data analysis, the interview transcripts were reviewed. We looked for, and labeled, activities, objects, events, and actions. During the data analysis process, we kept gathering and grouping those contents that shared common characteristics. Thus, we were able to reduce the vast amount of raw interview data into smaller, discrete, and more manageable pieces of data. By doing so, the key risks in each project were identified as well as the ways in which they were perceived and managed. Then, using the analysis steps mentioned in Section 4.1, the grouped data were closely examined and compared for similarities and differences, which were further supported by Hofstede's theory.

5. Profiles of the cases

A summary of the four projects and the risks exposed is given in Table 3. The projects are: a high way project in Poland (coded as AP); a railway project that links two provinces in China (AC); a housing project in Singapore (BS); and a trade center in northeast China (BC).

5.1. Project AP

Project AP was prepared for the 2012 UEFA European Championship. The project was delayed and overran for a variety of risks: (1) Bidding risk. AP was awarded to a JV led by Company A, who was a newcomer in Poland, the price of 1.3 billion PLN, was 46% lower than the client's base price. According to AP1, "Many uncertainties were out of consideration, which caused about 30% short fall against the base price"; (2) Contract risk. The contract designed by the local client was different from what Chinese contractors are familiar with, notably in risk allocation. Compared with a FIDIC (International Federation of Consulting Engineers) 1999 Contract for Construction, many pro-contractor clauses were deleted. Examples are noted in Table 4. The contract risk made it impossible to get reimbursement from changes, claims and arbitrations, which aggravated the bidding risk; (3) Public relations risk. The bidding and contract risks made the JV's capital chain tight. There was not enough money for Company A to pay the subcontractors. After some failed negotiations, the payment delay caused the Polish subcontractors to hold strikes and protesting parades, which caused wide criticism from the Polish society (Ni et al., 2007); (4) Construction period risk. Few Polish employees in the JV would like to have overtime work, which was out of Company A's consideration. Besides, there was 6 months' frozen period. According to EU technology, no concrete engineering could be placed at a temperature below −3 °C; (5) Environmental risk. Environmental protection seemed to be more rigorous than in China. No such

Table 3
Background information of case study projects.

	Company A		Company B	
Code	AP	AC	BS	BC
Location	Poland	China	Singapore	China
Project type	Road & bridge engineering	Road & bridge engineering	Housing engineering	Housing engineering
Client type	Government	Government	Private	Government
Form of contract	FIDIC form of contract (part deleted and changed)	Chinese standard form of contract	Chinese standard form of contract	REDAS form of contract
Commencement year	2009	2008	2007	2010
Planned duration	32 months	60 months	33 months	17 months
Actual duration	20 months (terminated)	32 months	42 months	13 months
Complete date	2011 (terminated)	2010 (completed)	2011 (completed)	2011 (completed)
Contract value	1.3 billion PLN (about 542 million USD)	3 billion CNY (about 483 million USD)	58 million SGD (about 47 million USD)	420 million CNY (about 68 million USD)
Cost performance	N/A (contract terminated)	Cost overrun (6%)	Cost overrun (17%)	Cost overrun (3%)
Time performance	N/A (contract terminated)	Time saving (46%)	Time overrun (27%)	Time saving (23%)

Table 4
Comparison of FIDIC 1999 Contract for Construction and the signed contracts.

FIDIC Contract	Signed contract of AP [a]
Clause 13.8 Adjustments for Changes in Cost — "The amounts payable to the Contractor shall be adjusted for rises or falls in the cost of labor, goods and other inputs to the Works"	Deleted.
Clause 14.2 Advance Payment — "The Employer shall make an advance payment, as an interest-free loan for mobilization".	Deleted.
Clause 20.1 Contractor's Claims	Deleted.
Clause 20.2–20.8 Disputes and Arbitration	Instead "The disputes shall be solved by the Common Court of Law appropriate for the legal seat of the ordering entity".

[a] Although little documentation could be accessed, the clauses listed were mentioned by all the participants.

measures were considered when bidding, including protection of endangered frogs, wildlife passage construction and soil treatment. This risk cost almost 20% of the budget; and (6) Linguistic risk. The contract had a Polish edition only with abstracts in Chinese and English, very few Chinese could speak Polish; some had poor English levels and so, they could hardly discuss technical problems.

All the risks identified made the project lack effective management. At half of the construction period less than 20% of the project had been completed, and the predicted total loss would be higher than the contract sum. After failures of negotiations or additional funding, the contract was terminated; Company A has suffered a claim of 741 million PLN (US $223 million).

5.2. Project AC

Project AC was a 42 kilometer passenger and freight railway built for improving the transportation capability between Provinces H and L. Risks were identified as: (1) Duration risk. The procurement duration was "commanded" to be shortened from the initial 60 months to 32 months to "guarantee the transportation". The risk would cause cost and quality uncertainties, but was addressed by Company A via changing the construction plan; (2) Land acquisition risk. It aggravated the schedule as 5 months were wasted in securing agreements because the dwellers wanted more money. The risk was managed with the help of the local government; (3) Construction risk in winter. This risk might bring safety and quality questions. However, the winter periods had to be used due to the tight schedule including the use of concrete engineering. Practitioners had to construct below an average temperature of −10 °C, with only 20 days of work suspended. Winter construction technology had been adopted such as using tents and quilts to keep the concrete warm; and (4) Safety risk. It happened as the workers seemed to ignore the safety measures. Once a scaffold was blown down as the workers had fastened the cables in soft soil; fortunately, no one was hurt. Although facing such risks, Company A completed the construction on time.

5.3. Project BS

BS was awarded to Company B with a schedule of 33 months. The following risks were identified: (1) Drawing change risk. Drawing changes were produced by the Singaporean client frequently so that the designed construction drawings could hardly be used as guidance for construction. Company B had to change the construction plan according to the changes. The risk postponed BS for 9 months and caused extra costs; (2) Client's payment risk. Sometimes the client would not pay for some of the changes as a result of some "excuses". As BS1 commented, once the client raised the change that the water proofing of the brick walls must be examined before the quantity was confirmed, but refused to pay for such changes as "it could be predicted by an experienced contractor". In fact, few contractors had ever considered brick's poor water proof features. But the clients insisted. At last BS1 reported to the boss, who then met the boss of the client company privately. Then the disputes were solved, and a payment made; (3) Environmental risk. Such risk happened owing to the rigorous environmental requirements in Singapore. Extra costs were paid for reducing noise, water treatment and other environmental measures. (4) Safety risk. The government would also inspect the construction site randomly for safety. The full credits for a company were 12 points and the company would be put onto a "blacklist" if all the points were deducted. That company could, then, not be awarded any public projects. Such requirements restricted the contractors' working periods and extended the construction duration and costs. Meanwhile, much of the spending for the environmental and safety risks was covered through drawing changes.

5.4. Project BC

An exhibition hall project in northern China was commissioned by the client (M city government). BC identified the key risks to be managed: (1) Duration demands. The BC project was required to host the Sino-Far East trade fair, which was valued to stimulate the local economy. It "must" be finished before the fair opened. When the trade fair was scheduled to be held earlier, the construction period was modified from the initial 17 months to 13 months. Practitioners from Company B had to give up some of their resting time to complete the project, "at all costs" (BC1); (2) Land acquisition risk. Challenges appeared when contractors negotiated with the locals for the land expropriation. It took one month to eliminate the risk, as M city government intervened to help coordinate the negotiation. However, it also aggravated the tough schedule and influence of the contractor's cost performance; (3) Construction risk in winter. During the tough 13 months there were 4 months under −25 °C. In fact, construction continued with only 1 day off for the traditional Chinese Spring Festival. To eliminate the influence of extreme

cold, a never-used-before concrete conservation measure was adopted, including covering quilts, using electric blankets and stoves, and fixing electric heating pipes in the beams. Equipment was also used for monitoring the concrete temperature. During the winter, a 3000 m^2 slab was successfully constructed; (4) Safety risks. Low temperatures might cause accidents. Meanwhile, participants mentioned that their workers "were often seen working in the air without protective measures". The practitioners of Company B had "no spare time supervising to ensure the safety". Finally the project was finished within the new schedule and Company B had won a 10 million CNY as a completion prize.

6. Discussion

6.1. Analysis 1: AC vs. AP

The risks identified in the cases are summarized in Table 5. Comparing AC with AP, risks were perceived differently even though the practitioners were from the same organization. In AC, the Chinese client raised the duration demands randomly for political reasons. Those behaviors were influenced by their low *UAI*. The client expected the construction to be accelerated without consideration of the consequential uncertainties, such as the quality problems (or they were aware of the potential problems but accepted them). This caused Company A to perceive duration risk. In contrast, although AP was also faced with political factors, no demands similar to those in AC were experienced, which might be attributed to the influence of Polish high *UAI* — that the client thought shortening the arranged schedule was full of uncertainties and so, they avoided such a requirement.

Different risk perceptions were attributed to differences in *UAI*. Contract risk and bidding risk were perceived in AP but not in AC. Polish uncertainty avoidance behaviors drove the rigorous contract terms, which were accepted by Company A due to its low *UAI* national culture. In AC, the contract terms were not enforced strictly. "Client's demands (such as duration requirement) sometimes were beyond the contract" (AC3). For bidding risk, *LTO* influenced Chinese practitioners that they wished to "use this project to capture new market, even with a little loss" (AP3). However, the loss was not controlled as too many uncertainties existed. Company A's low bidding strategy failed and resulted in losses. For safety risk, Chinese uncertainty acceptance influenced the practitioners to ignore the safety requirements in AC, while in Poland, such behavior was forbidden by strict regulations.

Another aspect of *UAI* impact was winter construction. In Poland, −3 °C was the temperature limit for concrete engineering according to the regulation, while in China, there was no such regulation. The different regulations caused different risk perceptions. In Poland, winter was almost wasted so that they suffered construction delay; in China, winter was utilized which brought construction completion on time.

IDV also influenced the risks perceived. That Chinese are collectivistic influenced the Chinese contractors' behavior that they valued the group interest, and tolerated self-sacrifices (Meng, 2013). Those behaviors impacted Company A's risk management in AC: they extended their working time by doing overtime work and utilizing the winter periods to reduce the duration risk. However, the Polish culture was quite different in *IDV*. In AP, Polish practitioners were described as "considering more about their own interests" (AP2), which was evidenced by Hofstede and Hofstede (2005: 107) that people with low *IDV* "only act in accordance with the group interests when both individual and group interests match". "Poles disliked the overtime work even when paid, and they preferred worship days and holidays: they thought that was normal" (AP3). Such behavioral differences extended Company A's schedule and affected their perception of the risk of construction period. Besides, Chinese value guanxi but not the Polish people. In AC, Company A depended on their guanxi with the local government to solve the land acquisition risk. In AP, Company A was expecting Chinese officers to mediate the public relations risk the same way as in AC. However, mediation between the governments could not solve the economic disputes; the subcontractors must be paid before they returned to work. Different *IDV* also influenced the results of the two projects that although the two projects were built for the respective states' activity, the individuals' interests must be fulfilled in AP, while in AC, the project must be done "at all costs".

The third influencing dimension was *MAS*, which impacted the public relations risk. Masculine society is described as "assertive, stress equity, and prefer to resolve conflicts by fighting them out" (Hofstede and Hofstede, 2005, p. 153). Thus in AP, the risk culminated in protest parades. In China, it was also common to see protests of construction workers for payment delay, but it was not a key risk perceived in AC as Chinese guanxi can be used to reduce the impacts.

6.2. Analysis 1′: BC vs. BS

The risks identified from the two projects of Company B varied, even though the cultures of China and Singapore are

Table 5
Major risks identified from the four projects.

AP	AC	BS	BC
Bidding risk	Duration risk	Drawings change risk	Duration risk
Contract risk	Land acquisition risk	Client's payment risk	Land acquisition risk
Public relation risk	Construction risk in winter	Environmental risk	Construction risk in winter
Construction period risk	Safety risk	Safety risk	Safety risk
Environmental risk	N/A	N/A	N/A
Linguistic risk	N/A	N/A	N/A

close in some dimensions such as *PDI*, *IDV*, *UAI* and *LTO*: (1) In BC, duration risk was perceived to be influenced by *UAI* that the client accepted the uncertainties brought through construction acceleration, while in BS, risk of drawing changes were exposed as the Singaporean client similarly accepted the ambiguous impacts of drawing changes under the lower score of *UAI* (Meng, 2013). It would be more expensive to respond to the risk of changing drawings than that of the duration, and such consequence could be attributed to the *UAI* difference; (2) their same *IDV* showed that both Company B and their clients valued guanxi, as well as their similar *LTO* supported their planning for the future, which impacted ways of managing the risks. In BS, when client's payment risk happened, Company B preferred negotiation rather than arbitration because "it would break guanxi for long term cooperation" (BC1). They also believed that "conversation among the bosses could solve project problems" (Meng, 2013), and the facts support that perspective. In BC, Company B also used a similar way to control the land acquisition risk, as they invited the local government (also their client) to help them negotiate with the locals.

MAS was different in the two countries. However, through the interviews no participants had confirmed the *MAS* influences on the risks exposed. Meanwhile, safety risks occurred in both BC and BS, their perceptions were not the same. In BC, the safety risks were owing to practitioners' low level of safety awareness, which was mostly influenced by *UAI*. In BS, besides the safety awareness, the risk was mostly due to the strict inspection of the Singaporean government. It could be inferred that national culture was one of the factors that influenced the contractor's risk perception.

6.3. Analysis 2: AC vs. BC

AC and BC were the two projects constructed in China. Although there are many differences in the background of both projects, such as the types of projects and the organizational cultures of companies, the risks perceived were similar. Such similarity may be linked to Chinese culture.

In AC and BC, duration risks were examined under the impact of Chinese *PDI* and *UAI*. High *PDI* suggests that decision making structure is centralized and superiors have more authority, which sometimes substitutes for organizational regulations. In the two cases, the government clients acted as the superiors — they issued orders for the contractors to follow. Meanwhile, low *UAI* aggravated such risk as mentioned in Step 1 and 1′.

Both the projects suffered from land acquisition risk. In the interviews, no direct relationship was found between the risk and Chinese culture. However, *IDV* was found to influence the way Company A and B managed the risk, as analyzed above, their guanxi worked.

Risk of construction in winter was the main component of duration risk. Companies A and B utilized the winter to shorten their schedules. Due to their collectivistic spirit and *PDI* features that group interests prevailed, practitioners subjugated their relaxation to ensuring that the projects were finished on time. Their *UAI* also influenced their decision making. Uncertainties of concrete engineering in a frozen temperature were tolerated, especially in BC, as commented by BC1,"I knew clearly that risks remained, as the measures adopted in BC had not been used before, nor did we have winter construction experience at −30 °C. But if we succeeded, the construction would be finished on time".

Meanwhile, as analyzed in the steps above, safety risks perceived were also influenced by low Chinese *UAI*.

6.4. Analysis 3: AP vs. BS

Analysis 3 is the complement of analysis 1, 1′ and 2. The two overseas projects are compared to see whether the different local culture might influence Chinese contractors' perceptions of risks. As shown in Table 5, risks were perceived differently in Poland and Singapore. The detailed analyses of risks and their cultural influencing factors were discussed above. It is noteworthy that, although BS used the contract form of the Real Estate Developers' Association of Singapore (REDAS), no contract risk was perceived. Such phenomenon could contribute to the different features of *IDV* and *UAI*. Fewer risks were suffered and were easier to manage in Singapore where the host culture was similar to the contractor's than that in Poland where the host culture was different. Most of the risks identified were attributed to the influence of cultural differences. The differences of *UAI* impacted Company A's perceived bidding and contract risks in Poland, while Company B perceived drawing change risk in Singapore. Another example was *MAS* which influenced the public relations risk suffered in AP, while no such risk was perceived in BS, as Singapore is a feminine country in which negotiation is preferred. In spite of this, there were some risks that contributed less impact. For example, the environmental risk in AP was suffered mainly because the official requirements differed from those in China, which could also be impacted by the *UAI*, but the influences were weak.

In project AP, language had caused communication problems, mainly because the Polish language was unfamiliar to Company A's personnel. In BS, no such risk arose as English is popular among Chinese people. Linguistic troubles played an important role in intercultural interactions. One misses a lot of the cultural subtleties if one does not know the language of one's country of residence (Hofstede, 2008, p. 425). Language is one aspect on which international contractors should concentrate.

6.5. Conceptual framework: culture vs. risk management

The findings show that national culture influences contractors' risk perception and ways of management. Analyses 1 and 1′ indicate that risks are perceived differently by the same contractor under different host cultures. Analysis 2 indicates that national culture has similar effects on contractors' risk management, beyond organizational cultural impacts. Analysis 3 confirmed the statement that project risks are perceived differently across counties. When the host culture is similar to the contractor's, the risks perceived are fewer and managed

Table 6
The nexus of identified risks and the relevant culture dimensions.

Project	Risks	*PDI*	*IDV*	*MAS*	*UAI*	*LTO*
AC & BC	Duration risk	√	√			
	Land acquisition risk		√			
	Construction risk in winter	√	√		√	
	Safety risk				√	
AP	Bidding risk				√	√
	Contract risk		√		√	
	Public relation risk		√	√		
	Construction period risk				√	
	Environmental risk				√	
	Linguistic troubles	–	–	–	–	–
BS	Drawing changing risk	√	√		√	
	Client's payment risk		√			√
	Environmental risk	–	–	–	–	–
	Safety risk	–	–	–	–	–

more easily than in a situation where the two cultures are different.

One or more cultural dimensions are linked to a specific risk, as shown in Table 6. *IDV* and *UAI* are the foci of attention, while the other dimensions also have some impacts. The results suggest that not only the differences in the levels of cultural dimensions impact risks, but also similar levels. However, not all the risks perceived are linked to cultural factors, language is one manifestation of culture on which international contractors should concentrate.

The conceptual framework of the culture impacting path is presented in Fig. 3. National culture is instilled in practitioners' minds and influences their thoughts, values, behaviors and practices, such as communicating and decision making, which inform their ways to execute the project. A risk is perceived to occur when the contractor's realization deviates from their expectation of running the project. If the culture of the host country is similar to the contractor's home country culture, such as in BS, one would perceive fewer risks and could use more familiar ways to control them. However, when the contractor ventures abroad where the culture is markedly different, the local way of running a project is likely to be quite different from the contractor's, such as the situation of AP, then, the risks perceived could be more and the contractor's usual way of addressing such risk may not be accepted by the host nationals as they have different values and behavioral principles. Then the contractor probably suffers loss from such risks.

7. Conclusions

This study contributes to understanding project risks as perceived by contractors from a perspective of culture. Using a special analysis design, we distinguish the influence of national culture from that of organizational culture. The findings show that national culture plays a more important role in contractor's risk management. Project risks are perceived and managed differently in different national cultures. Risks are fewer and

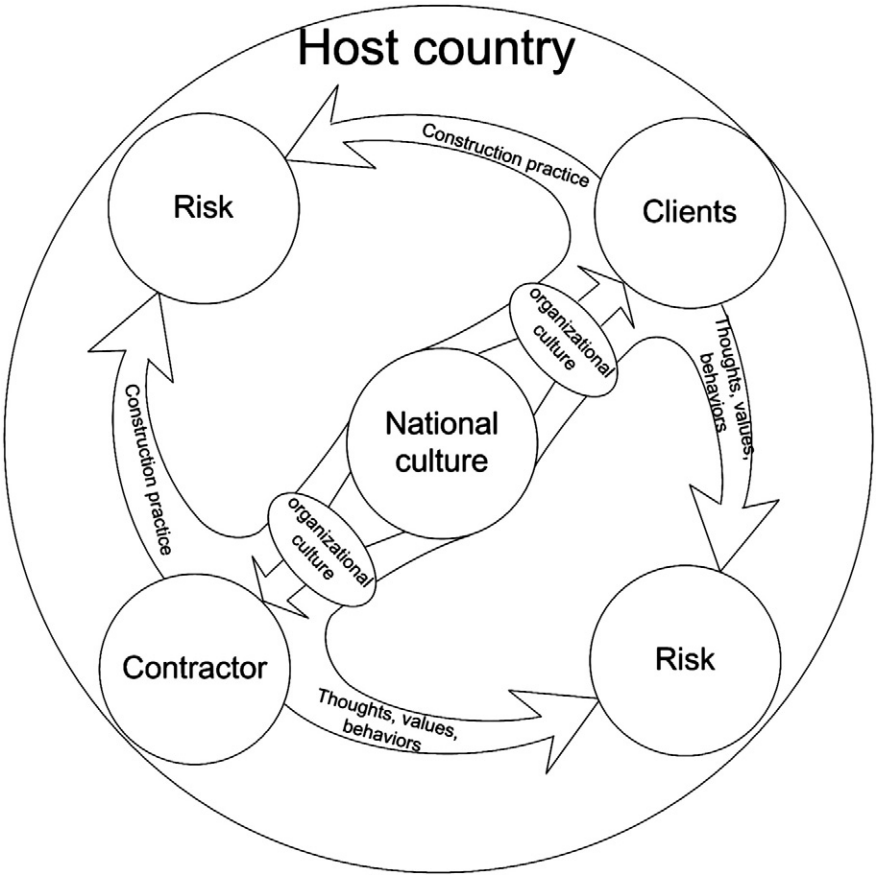

Fig. 3. Conceptual framework of the culture influencing path.

easier to manage where the host culture is similar to the contractor's than when the host culture is different. Based on the Hofstede's theory and culture model, it is suggested that *IDV* and *UAI* are the foci of the cultural impact, while *PDI*, *LTO* and *MAS* also contribute.

The knowledge of such issues is useful as a conceptual framework is provided to show the cultural influencing factors: (1) national culture is instilled in practitioners' minds and influence their thoughts, values, behaviors and construction practices; (2) risks are extended when the host country culture differs from a contractor's expectation; and (3) a contractor's knowledge of the host country's national culture influences their risk management. By using this framework, contractors could make effective plans to manage project risks, minimize the influences of culture shock, and develop a more realistic way of understanding and managing the differences which are inevitable in international projects. Therefore this finding has a practical value.

8. Limitations and future research

Although this study focuses on the role of national culture in influencing risks, it is important to notice some limitations. Only Chinese practitioners were interviewed in the international cases and no local participants were interviewed due to the external difficulties. Supplementing of such data will help improve the conceptual framework. Meanwhile, as the findings indicate that not all the risks perceived are linked to cultural factors, cultural dimensions may be extended and refined in the future so that more detailed investigations may result. This limitation, however, does not nullify the theory augmentation derived from the empirical evidence found in this research which demonstrates the impact of culture on perceptions of project risks. Further research is required in this field, advisedly using ethnographic methods in studies of live projects preferably, throughout their realization.

Conflict of interest

The authors declare that there is no conflict of interests regarding the publication of this article.

Acknowledgements

The authors would like to acknowledge the support from the National Natural Science Foundation of China (Project Number: 71202084 and 71231006) which funded this research.

References

Bredillet, C., Yatim, F., Ruiz, P., 2010. Project management deployment: the role of cultural factors. Int. J. Proj. Manag. 28, 183–193.

Casson, M., 1993. Cultural determinants of economic performance. J. Comp. Econ. 17, 418–442.

Chan, E.H.W., Raymond, Y., 2003. Cultural considerations in international construction contracts. J. Constr. Eng. Manag. 129, 375–381.

Chen, P., Partington, D., Qiang, M., 2009. Cross-cultural understanding of construction project managers' conceptions of their work. J. Constr. Eng. Manag. 135, 477–487.

Cheung, S.O., Wong, P.S.P., Wu, A.W.Y., 2011. Towards an organizational culture framework in construction. Int. J. Proj. Manag. 29, 33–44.

Das, T.K., Teng, B.-S., 2001. A risk perception model of alliance structuring. J. Int. Manag. 7, 1–29.

Davies, H., 1995. Interpreting Guanxi: The Role of Personal Connections in a High Context Transitional Economy, ed. Longman, Hong Kong.

de Camprieu, R., Desbiens, J., Feixue, Y., 2007. 'Cultural' differences in project risk perception: an empirical comparison of China and Canada. Int. J. Proj. Manag. 25, 683–693.

Essinger, J., Rosen, J., 1991. Using Technology for Risk Management. Pearson Education Ltd, UK.

Fellows, R., 2010. Understanding organisational culture in the construction industry. Constr. Manag. Econ. 28, 898–900.

Fellows, R., Liu, A.M.M., 2013. Use and misuse of the concept of culture. Constr. Manag. Econ. 31, 401–422.

Fellows, R., Hancock, M., Seymour, D., 1994. Conflict resulting from cultural differentiation: an investigation of the new engineering contract. CIB REPORT, p. 259.

Griffin, D.W., Li, K., H.Y., Zhao, L., 2009. Cultural values and corporate risk-taking. http://finance.sauder.ubc.ca/conferences/summer2009/files/papers/KaiLi.pdf (20 November, 2012).

Hampden-Turner, C., Trompenaars, F., 1997. Response to Geert Hofstede. Int. J. Intercult. Relat. 21, 149–159.

Hofstede, G., 1980. Culture's Consequences: International Differences in Work-Related Values. Sage, California, USA.

Hofstede, G., 2001. Culture's Consequences: Comparing Values, Behaviors, Institutions and Organizations Across Nations, 2nd ed. Sage, Thousand Oaks, CA, USA.

Hofstede, G., Hofstede, G.J., 2005. Cultures and Organizations: Software of the Mind. McGraw-Hill Education, UK.

Hofstede, G., 2008. Culture's Consequences: Comparing Values, Behaviors, Institutions and Organizations Across Nations, 2nd ed. Shanghai Foreign Language Education Press, Shanghai, China.

Hofstede, G., Hofstede, G.J., Minkov, M., 2010. Cultures and Organizations: Software of the Mind, 3rd ed. McGraw-Hill, NY, USA.

Hu, H., Chen, Y., Zhu, Y.H., 2011. Managing culture risk factors for overseas construction projects. Civ. Eng. Innov. 5, 41–48.

Javidan, M., House, R., 2001. Cultural acumen for the global manager: lessons from project GLOBE. Organ. Dyn. 29, 289–305.

Kanagaretnam, K., Lim, C.Y., Lobo, G.J., 2011. Effects of national culture on bank risk taking. http://centerforpbbefr.rutgers.edu/2011PBFEAM/Download/AS/AS-01/2011PBFEAM-008.pdf (20 November, 2012).

Keillor, B., Hauser, W., Griffin, A., 2009. The relationship between political risk, national culture and foreign direct investment as a market entry strategy: perspectives from U.S. firms. Innov. Mark. 5, 48–56.

Kirkbride, P.S., Tang, S.F.Y., Westwood, R.I., 1991. Chinese conflict preferences and negotiating behaviour: cultural and psychological influences. Organ. Stud. 12, 365–386.

Kogut, B., Singh, H., 1988. The effect of national culture on the choice of entry mode. J. Int. Bus. Stud. 19, 411–433.

Kreiser, P., Marino, L.D., Dickson, P., Weaver, K.M., 2010. Cultural influences on entrepreneurial orientation: the impact of national culture on risk taking and proactiveness in SMEs. Enterp. Theory Pract. 34, 959–983.

Kubátová, J., 2012. The influence of national culture on knowledge management in China managerial implications for central European countries. Cent. Eur. Bus. Rev. 1, 20–26.

Kwan, A.Y., Ofori, G., 2001. Chinese culture and successful implementation of partnering in Singapore's construction industry. Constr. Manag. Econ. 19, 619–632.

Li, K., Griffin, D., Yue, H., Zhao, L., 2012. How does culture influence corporate risk-taking? http://finance.sauder.ubc.ca/~kaili/lgyz_risktaking.pdf (21 November, 2012).

Ling, F.Y.Y., Bui, T.T.D., 2010. Factors affecting construction project outcomes: case study of Vietnam. J. Prof. Issues Eng. Educ. Pract. 136, 148–155.

Liu, Q., 2008. Section II: Core culture values and beliefs of Singapore. http://www.ncl.ac.uk/ecls/assets/documents/pdf/countryfiles/CCC-Singapore.pdf (3 September, 2013).
Liu, A.M.M., Fellows, R.F., 2008. Organizational culture of joint venture projects: a case study of an international JV construction project in Hong Kong. Int. Hum. Resour. Dev. Manag. 8, 259–270.
Liu, J.Y., Wu, H.J., 2008. The dragon looks west. *CIOB Icon*, Chartered Institute of Building, Englemere, UK, 24–25.
Liu, J., Zou, P., Gong, W., 2013. Managing project risk at enterprise level: exploratory case studies in China. J. Constr. Eng. Manag. 139, 1268–1274.
Low, S.P., 1998. Cultural influence on construction marketing and management in China. The First Leeds International Construction Marketing Conference: Research into Practice, Leeds, pp. 1–12.
Low, S.P., Shi, Y., 2002. An exploratory study of Hofstede's cross-cultural dimensions in construction projects. Manag. Decis. 40, 7–16.
McSweeney, B., 2002. Hofstede's model of national cultural differences and their consequences: a triumph of faith — a failure of analysis. Hum. Relat. 55, 89–118.
Meng, F.Y., 2013. A preliminary discussion of cross-cultural risk management in the international projects. Proj. Manag. Technol. 11, 28–32 (in Chinese).
Nasierowski, W., Mikula, B., 1998. Culture dimensions of Polish managers: Hofstede's indices. Organ. Stud. 19, 495–509.
Ni, W.F., Gu, Y.Q., Yao, W.T., 2007. How to damage a overseas project. New Century Weekly, (<http://cover.caing.com/covec_in_poland/>. (24 March, 2013)).
Ozorhon, B., Arditi, D., Dikmen, I., Birgonul, M.T., 2008. Implications of culture in the performance of international construction joint ventures. J. Constr. Eng. Manag. 134, 361–370.
Park, S.H., Ungson, G.R., 1997. The effect of national culture, organizational complementarity, and economic motivation on joint venture dissolution. Acad. Manag. J. 40, 279–307.
Rees-Caldwell, K., Pinnington, A.H., 2013. National culture differences in project management: Comparing British and Arab project managers' perceptions of different planning areas. Int. J. Proj. Manag. 31, 212–227.
Reina, P., Tulacz, G.J., 2012. The top 225 global contractors. Eng. News Rec. 13–17.
Shore, B., Cross, B.J., 2005. Exploring the role of national culture in the management of large-scale international science projects. Int. J. Proj. Manag. 23, 55–64.
Signorini, P., Wiesemes, R., Murphy, R., 2009. Developing alternative frameworks for exploring intercultural learning: a critique of Hofstede's cultural difference model. Teach. High. Educ. 14, 253–264.
Simon, E., Vidot-Delerue, H., 2006. Alliance Relationships and Risks Perception: The Influence of National Cultural Values? Université Paris-Dauphine.
Summerill, C., Pollard, S.J., Smith, J.A., 2010. The role of organizational culture and leadership in water safety plan implementation for improved risk management. Sci. Total Environ. 408, 4319–4327.
Tjosvold, D., Sun, H.F., 2002. Understanding conflict avoidance: relationship, motivations, actions, and consequences. Int. J. Confl. Manag. 13, 142–164.
Todeva, E., 1999. Models for comparative analysis of culture: the case of Poland. Int. J. Hum. Resour. Manag. 10, 606–623.
Trompenaars, F., Hampden-Turner, C., 1997. Riding the Waves of Culture: Understanding Cultural Diversity in Business, 2nd ed. Nicholas Brealey, London, UK.
Weber, E.U., Hsee, C.K., 1999. Models and mosaics: investigating cross-cultural differences in risk perception and risk preference. Psychon. Bull. Rev. 6, 611–617.
Williamson, D., 2002. Forward from a critique of Hofstede's model of national culture. Hum. Relat. 55, 1373–1395.
Yin, R.K., 2009. Case Study Research: Design and Methods, 4th ed. Sage Publications, CA, USA.
Zhang, X., 2011. Social risks for international players in the construction market: a China study. Habitat Int. 35, 514–519.
Zwikael, O., Ahn, M., 2011. The effectiveness of risk management: an analysis of project risk planning across industries and countries. Risk Anal. 31, 25–37.
Zwikael, O., Shimizu, K., Globerson, S., 2005. Cultural differences in project management capabilities: a field study. Int. J. Proj. Manag. 23, 454–462.