The effect of cross-cultural uncertainty and complexity within multicultural construction teams

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Abstract

Purpose – The purpose of this paper is to examine challenges faced by senior construction managers in managing cross-cultural complexity and uncertainty. The rationale was to identify the key strategies that are considered essential for managing cross-cultural complexity and uncertainty.

Design/methodology/approach – Interviews with 20 senior construction managers, ten in Kenya and ten in the UK, were recorded, transcribed and entered into the qualitative research software NVivo. Validity and reliability were achieved by first assessing the plausibility in terms of already existing knowledge on some of the cultural issues raised by participants. The findings were presented to the participants through workshops and group discussions.

Findings – The emerging key issues suggested that project leaders need to learn how to control their own characteristics and to use them selectively. An effective multicultural construction project team should focus on team output and attributes that characterise a multicultural team as a social entity.

Practical implications – Findings indicate that the role of construction project managers has significantly changed over the past two decades. In order to deal with cross-cultural uncertainty, project leaders must have superior multicultural and interpersonal skills when managing global multicultural heavy engineering projects.

Originality/value – The research shows that leaders of global construction project teams need a good understanding of their culture, environment and the value of their individual contributions.

Keywords Cultural complexity, Cross-cultural uncertainty, Multicultural integration,
Cross-cultural management, Construction industry, Kenya, United Kingdom

Paper type Research paper

1. Introduction

The continual need for improved speed, cost, quality, safety, together with technological advances, environmental issues and fragmentation throughout the construction industry, have contributed to the increased complexity of construction

projects (Ochieng, 2008). How to deal with complex projects is of increasing concern throughout the industry. The few complexity-related studies that exist have tended to focus on either uncertainty and complexity in non-specific terms, or the experiences of individual organisations within the context of developed countries (Baccarini, 1996; Cleden, 2009; Meredith and Mantel, 1995; Thompson, 1967). According to Cleden (2009), uncertainty can be grouped into two main classes: variability uncertainty, which is behind a number of common problems in construction projects; and indeterminate uncertainty, which always leads to indistinctness in construction projects. For example, uncertainty stemming from environmental issues, design and financial aspects of construction projects should at least be alleviated or ideally eradicated. Construction clients are intensely interested in realising some form of breakthrough that will lower team uncertainty on projects (Ochieng, 2008).

The cultural weight that each contractor brings to a project is more often than not an intended action but some aspects of culture may be conscious and can be explained to others. However, few individuals are fully aware that their actions and ways of thinking are dictated by more hidden or indeed unconscious values, for example, attitudes towards authority, approaches to carrying out a task, concern for efficiency, communication patterns and learning styles (Johnson *et al.*, 2009; Tirmizi, 2008). In most cases it is not a situation of one culture being right and another wrong within a group, but rather there is a shared view of what is considered right or wrong, logical and illogical, fair and unfair.

It is significant that cultural norms and values are passed on from generation to generation (Mattarelli and Tagliaventi, 2010; Dekker *et al.*, 2008). Cultural norms can affect the way construction project teams communicate and behave within project environments. According to the studies by Brett *et al.* (2006), Hall (1966), Hofstede (1972, 1980) and Trompenaars (1993), human interaction does not occur in a vacuum or isolation; instead it takes place in a social environment governed by a complex set of formal and informal values. This view is supported by Brenton and Driskill (2011), who suggested that organisations with strong cultures contain surface cultural elements that are tied into employee beliefs and assumptions. Shaping as well as being shaped by these governing mechanisms is something that we often consider one of the attributes of culture. Cultures materialise and evolve in response to social cravings for answers to a set of problems common to all groups (Brett *et al.*, 2006; Connaughton and Marissa Shuffler, 2007; Hofstede, 1991). In order to survive and exist as a social identity, every construction project group, regardless of its size, has to develop solutions to these problems.

According to the International Labour Organization (ILO, 2001), the construction industry throughout the world faces similar problems and challenges. However, in Kenya these are exacerbated by a general situation of socio-economic stress and a general inability to address the key issues within the industry. The problems have become more severe in recent years. In this study, lessons were drawn from the literature to highlight factors that influence project uncertainty and complexity in Kenya and the UK. The nature of complexity within heavy construction engineering projects has been of increasing interest, especially since the ESPRC research group was set up in 2003 (Winter *et al.*, 2006). However, it could be argued that the concept of cross-cultural complexity has been neglected and there have been no empirical studies of it. Given the supposed severity of the impact of cross-cultural complexity and the obvious failings of the industry's approach towards people management, it is reasonable to assume that such an issue would provide a focus for research to improve practice.

Based on the previous studies on organisational culture, Gajendran *et al.* (2012) created an integrated model to evaluate organisational culture. This model aligned differing perspectives on organisational culture research with some existing paradigms to understand organisational culture. The last paradigm, fragmentation one, confirmed that some cultural values, beliefs and scripts are not shared by all stakeholders. This paper mainly addresses the management of complexity and uncertainty. It adopts a specific view of uncertainty and complexity as it seeks to examine the relationship between the two in the context of "cultural" impacts (negative and positive) on construction projects. This study examined the following research question: what are the challenges faced by senior construction managers in managing complexity and uncertainty? The intention was to identify the key strategies that are considered necessary for managing cultural complexity and uncertainty. There is a review of multiculturalism, characteristics of complexity, uncertainty and project change in the next section.

2. Multiculturalism

Multiculturalism has become an important focus in debates in construction management research (Ochieng and Price, 2010). An extensive literature review demonstrated that multiculturalism is often an indistinctly used term, which has a diverse range of meanings, and very few empirical studies have been undertaken on its role in construction project management. It could therefore be suggested that any construction project where contractors bring different assumptions about working norms (either in design engineering or team behaviour) is a multicultural project. Even when all contractors are from one country, the construction project manager may still have to deal with cultural diversity.

Within the context of this study some team differences are strictly cultural, while others stem from varied management styles and strategies. Managing a multicultural construction project team presents new challenges and opportunities to harness new skills, in particular language and cultural knowledge. For instance, in a global construction project environment, effective communication is an essential skill. It requires clients and construction project managers to acquire and promote knowledge and understanding of the cultures and attitudes. Cultural differences and a lack of management talent can make it difficult for multinational construction organisations to attain their global business objectives. According to Connaughton and Marissa Shuffler (2007), organisations working with multicultural teams face a threefold multicultural challenge:

· to enable a mixed group to work towards a common goal;

· to maximise contribution of each project team member; and

· to ensure fair treatment for all irrespective of background.

Whether the multicultural character of an organisation arises from its operation in various countries, or from the mixed backgrounds of a workforce in a single location, the client must address this cross-cultural diversity if it is to achieve its goals. Every multinational construction organisation has a strategic choice in how it will face this challenge: whether to adopt a fundamentally defensive approach, or one that develops the individual and the group.

3. Coalescing complexity, uncertainty and project change

Rethinking Construction (Egan, 1998) and current reports have reflected on the causes of negative team working. Their general conclusions highlight the individualistic and

competitive focus of the industry. Some of the proposals for change by the construction reports in the UK (Egan, 1998, is a typical example), such as integrating teams, collaboration in the supply chain and improving the industry's commitment to people, clearly indicate the need to address cultural complexity and uncertainty in construction project teams. The inference is that project teams in the current climate accept that their existence is temporary and focus solely on the outcomes of a particular project. The single-project outlook pervades every aspect of culture and is arguably the primary cause of the industry's problem in Kenya and the UK (Ochieng, 2008).

Blismas et al. (2004) identified ten main factors influencing project delivery on construction projects, which were grouped under four headings: environmental influences, client influences, third-party influences and planning influences. Environmental influence factors exacted the greatest overall influence on project delivery, constituting five out of the ten factors. Two of the characteristics that aggravated the effects of these factors were uncertainty and immitigability. These two factors are by nature unpredictable and, therefore, uncertain in action and effect. In addition, they are generally beyond the control or influence of the organisations.

When considering client influences Blismas et al. found that a number of decisions taken by clients have ongoing effects on construction project teams, but there were two main influencing factors originating from the client body: indecisiveness and non-uniformity. Blismas et al. found that non-uniformity of the client resulted in inter-departmental differences and constant changes to the projects. Changes were made as a result of misunderstandings between departments, indecision, insufficient information or altered circumstances. Lack of client leadership and internal communication emerged as causes of uncertainty and change in projects.

When investigating studies under the third heading, Blismas et al. established that third parties had no vision of project planning and therefore usually applied enormous pressure on individual project phases. While a number of authors have argued the case for improved management practices that could lead to a better-unified team integration across the different tiers of the construction supply chain (Baiden and Price, 2011; Bresnen and Marshall, 1999; Briscoe et al., 2004; Mitullah and Wachira, 2003; Ochieng and Price, 2010), in practice it is difficult to attain this. Kenyan and UK construction industries, with a few exceptions, remain typified by adversarial practices and disjointed supply relationships. Commonly, clients appear to distrust their main contractors, who in turn maintain an arm's length relationship with their subcontractors and suppliers. Construction projects are treated as a series of chronological and mainly separate operations where the individual players have very little stake in the long-term success of the resulting building or structure, and no commitment to it.

It has been widely suggested that supply chains can exist in a number of different forms and can vary significantly in their complexity and diversity (Cox, 1999). Construction supply chains on larger construction projects involve hundreds of different organisations supplying materials, components and a wide range of construction services (Dainty et al., 2001). A continued dependence on a disjointed and largely subcontracted workforce has arguably amplified the complexity of this supply network. In reality, since the 1970s, the industry's reformation has given rise to the creation of what now appears to be an institutionally entrenched low-skill, poorly equipped and labour intensive sector (Bosch and Philips, 2003; ILO, 1972). A number of contractors operate as flexible firms, exemplifying the hollowed out structure characterised by extensive outsourcing (Atkinson, 1984; ILO, 2001). This demonstrated a problematic context for

attaining the integrated delivery of the industry's projects and processes. Despite the normal complexity that the industry faces, it is vital that it expands its supply-chain practices to deliver value to the client, rather than simply seek to generate short-term cost savings.

If both the Kenyan and the UK construction industry want to accomplish better practice, then thought must be given to what constitutes best practice. Cleland and Bidanda (2009) and Fox (1999) suggested that best practice included:

- standardisation of procedures and methodologies;

- efficient interface management;

- ethical actions;

- communication between government and contractors;

- attention to organisation culture;

- government understanding of the construction industry; and

- recognition of location differences in language, terminology and cultural standards.

4. Snapshot of project complexity, uncertainty and change
The escalating complexity of multi-purpose construction project management emerged from the growing demands of clients and the increase of multi-disciplinary teams that deliver multi-million projects. According to Cleland and Bidanda (2009) project complexity has amplified exponentially since the late 1980s. Evidence shows that the increase in project complexity has many facets: designs that approach the physical limits of construction materials and equipment, construction in remote sites, partnerships, data integration requirements, and various project delivery systems and contracting strategies (Cleland and Bidanda, 2009). Interestingly, globalisation and outsourcing also contribute to project and cross-cultural complexity. As multinational construction organisations move into new territories, geographical, social and political factors add to the complexity of their projects. Managing global construction projects requires construction organisations to ascertain how to work within an intercontinental environment with multicultural project teams.

For instance, the East-West motorway project in Algeria was one of the significant national projects undertaken by the Algerian Government. In the entire Eastern region of Algeria, there were 660 from Algeria staff including 90 Kajima Construction Corporation employees from Japan. The manual construction workers consisted of 10,500 Algerians and 6,000 from other nations including South Asia. According to the Project Director (Minoru Ishida), the people of Algeria had confidence in Japanese technology and quality. The scale of the project was bigger and the duties of employees were also greater. Though it was challenging to overcome cultural and national differences while executing project tasks, Minoru, noted that he had to apply "5As": awatezu (calmness), aserazu (patience), atenisezu (self reliance), anadorazu (respect) and akiramezu (persistence) (Kajima Construction Corporation, 2009).

Multicultural construction projects are invariably complex and have become more so. Baccarini (1996) stated that the construction process could be considered as the most complex undertaking in any industry. However, Morris *et al.* (2000) emphasised that the construction industry has experienced great difficulty in handling the

ever-increasing complexity of major construction projects. It is essential to assert that the concept of project complexity and cultural complexity has received little in-depth attention in project management literature. A review of the literature showed that certain project characteristics present a basis for shaping the appropriate managerial actions needed to complete a project successfully (Turner, 1998; Winter *et al.*, 2006). Complexity is one such significant project dimension. As Bennett (1991) claimed, practitioners habitually portray their projects as simple or complex when they are discussing management issues. This suggests a practical acceptance that complexity makes a difference to the management of construction projects. As confirmed in the reviewed literature, the magnitude of complexity to the project management process is widely accredited, for example:

- Complexity is a key decisive factor in the selection of an appropriate project organisational form (Cicmil *et al.*, 2009; Vidal and Marle 2008).

- Complexity is often used as a criterion in determining a suitable project procurement arrangement (Wozniak, 1993; Maylor *et al.*, 2008).

- As the Chartered Institute of Building (CIOB, 1991) and Rowlinson (1988) claimed, complexity affects project, cost, time, quality and objectives. Generally, the higher the project complexity the greater cost and the time.

- Project complexity hampers the clear identification of objectives and goals of construction projects (Austin *et al.*, 2002; Morris *et al.*, 2000).

A common way of defining complexity is to quantify it in various dimensions, such as the number of stakeholders, units and resources. It is essential to underline that when project complexity is considered, project managers have to spell out to which of the project's dimensions (organisational or technological) they refer. Gidado (1996) showed how differentiation and interdependency transpires through technological and organisational complexity. Baccarini (1996) countered this argument by suggesting that organisational complexity based on differentiation can be either vertical or horizontal. Horizontal differentiation is determined by the number of organisational units and task structure – project job and specialisation – while vertical differentiation is the depth of the organisation's hierarchical structure. The other feature of organisational complexity in construction projects is the degree of interaction between organisational elements and operational independencies.

Team integration complexity by differentiation is determined by the array of outputs, inputs and tasks, and the number of specialities involved in a project. As noted in a report by the Strategic Forum for Construction (2002), large construction projects are typically characterised by the engagement of diverse contractors and project teams. This leads to the formation of a temporary multicultural project structure to manage the construction project. A project structure can be presented in two dimensions. The first feature is based on a relationship between complexity and uncertainty. As noted above, the second feature involves the work of Baccarini (1996). Williams (1999) claimed that there is uncertainty in the instability of circumstances and assumptions on which a project is based. Evidence showed that as a project matures in real time, the uncertainty and hence project complexity is minimised (Meredith and Mantel, 1995). Uncertainty can make project situations appear weighed down with danger. External factors can be looked at as the driving force for uncertainty in projects.

The issue of complexity is the prime focus in today's construction project management literature. Project complexity can be found in three environments: outside the project, inside the project and in the environment outside the project (Ochieng, 2008). One of the key reasons why complexity varies is that clients have different goals, interests and expectations. A second reason is that in different project phases there are different driving factors. As a result, one could suggest that traditional forms of hierarchical team formation and leadership are being replaced by self-organising agents, and self-directed, self-managed team concepts (Thamhain and Wilemon, 1996).

5. Cross-cultural change in construction project teams

In today's fast-paced, highly competitive world, change is inexorable. Construction organisations must respond to change to remain competitive and client focused. The problem is that communications for implementing change often come from various sources and in many different formats. Projects are created to facilitate change, but by their nature are themselves incessantly changing. It is now projected that when considered in the context of construction projects, change occurs in two places, internally or externally. Organisational change is being considered here and in this context a construction project organisation is the same as any other organisation. The next section details the research method and a symposium of findings drawn from the interview transcripts. This is followed by a conclusion and recommendations.

6. Method

A literature review was performed to determine what is known about the specific research problem of cross-cultural complexity and uncertainty in Kenya and the UK. The review was conducted into a variety of project management areas, such as project teams, project culture, team integration and project communication. From the foundation of the review, a research problem was defined (uncertainty and cross-cultural complexity) to determine the direction of the fieldwork. This procedure is in line with the purpose of literature control, as defined by May (2002), who indicated that literature should assist the researcher in planning the narratives for the actual research. At the end of the process, the narratives were compared with the research into the related literature in order to draw conclusions. The fieldwork carried out in Kenya and the UK identified some of the possible causes of cultural complexity and uncertainty in projects. In any qualitative research, data analysis becomes an ongoing process, so the researcher has to make thoughtful, informed decisions throughout the data collection procedure (Bryman, 2004).

A preliminary pilot study was carried out with experienced project managers in the UK. The purpose of the pilot study was to assess clarity of questions, timing and suitability of the respondents for the study, and to establish its reliability and validity. The interview schedule included closed and open questions. The purpose was to obtain rich data about attitudes, opinions and experiences of people involved with multicultural heavy construction engineering projects. Twenty interviews were carried out with senior construction managers: ten in Kenya and ten in the UK. The 20 participants worked in a mixture of organisation formations and project arrangements. Questions were asked to elicit cross-cultural complexity on heavy construction engineering projects. The purpose of the interviews was to get views from participants about the degree of success they encountered in managing uncertainty and the difficulties they faced in supervising cultural complexity.

Table I provides a summary of the organisations used in this study. For the purposes of confidentiality the firms' names have been changed. The eight used in this study operated in the heavy construction engineering sector.

The data obtained from the 20 interviews were found to be very useful in addressing the research objectives. Even though the data analysis phase was placed after the fieldwork phase, it was implemented as an ongoing process of fieldwork itself, rather than as a final stage in a linear model. Qualitative researchers (Bryman, 2004; Denzin and Lincoln, 1998; Huberman and Miles, 2002; Silverman, 2001) stress the continuous interconnection of fieldwork and interpretation. Bryman (2004) addressed it as a spherical sequence, whereby the researcher's original theoretical position is continuously altered or refocused by the fieldwork in a dynamic dialectical method. After reviewing a number of software packages, the researchers came to the conclusion that the NVivo software was best suited for this study. One of the primary functions of this software that emerged was the ability to add memos to sections of the data, as thoughts and connections were made during all phases of the data analysis. It enabled

Profile of organisations	Participants	Participant country of origin
Company A is a global group of energy and petrochemical companies. The company is active in more than 130 countries and territories and employs 180,000 people worldwide	A	UK
Company B is one of the UK's leading construction companies. It has a famous heritage – "Being Number One" – which is designed to ensure a successful future	S	UK
Company C is a leading international engineering, construction and project management contractor, and power equipment supplier. The company operates through three business groups: global engineering, construction, and global power	R	UK
Company D is a global engineering, construction and project management company with more than a century of experience on complex projects in challenging locations. Privately owned with headquarters in San Francisco, it has forty offices around the world and 40,000 employees	J	Kenya
Company E is a limited liability company responsible for the transmission, distribution and retail of electricity throughout Kenya and East Africa. Projects managed include power plants	G, H, L, P, Q	Kenya
Company F is a medium-sized company offering premier quality consultancy, design, engineering, procurement, construction and project management, and validation services principally to the process and manufacturing industries and other customers whose facilities involve technical complexity	C, I	UK
Founded in 1919, Company G is one of the world's largest providers of products and services to the oil and gas industries. The company adds value through the entire lifecycle of oil and gas reservoirs	D, E, F, K	UK
Company H is the leading electric power generation company in Kenya, producing about 80 percent of electricity consumed in the country. Projects managed include power plants	B, M, N, O	Kenya

Table I.
Profile of organisations

the researchers to sort through the data and at the same time allowed exploration for patterns and recurring phenomena. The codification system was drawn from the initial interview questions, which had been based on appraisal of key issues arising from the literature. Data were then first coded, searched according to codes, and the underlying themes and patterns revealed. Initial and subsequent impressions and thoughts were recorded in detail emphasising the organic nature of this method for data analysis. As the data analysis progressed, further details were obtained, with sections of data intensively analysed. The generation of themes was an ongoing and development process, garnered in part by the application of a large number of codes. Two main parent codes (or clusters) provided meaningful categories:

- reviewing current practice in Kenya and comparing it with practice in the UK; and

- identifying factors contributing to cross-cultural complexity and uncertainty.

There was a logical progression to the order of the parent codes. This was an attempt to ensure that the main objectives of the research were met. Validity and reliability were achieved by first assessing the plausibility of objectives as it related to already existing knowledge on some of the cultural issues raised by participants. The verification took place after the interpretation of data; this involved presenting the findings to the main participants of this study in Kenya and the UK through workshops and group discussions. The validation took place after the verification process; this involved presenting the findings to a different group of senior managers who were not involved with the study. This was achieved through a focus group. Rigour was achieved by focusing on verification and validation; this included the responsiveness of the researchers during the fieldwork, methodological coherence, sampling, data analysis and thinking theoretically.

The philosophical consideration of this research can be viewed from two broad perspectives. The first was linked to the essential requirement of investigating cross-cultural practices in projects. The second was linked to the need to select a research strategy that enabled the dissemination of cross-cultural complexity and cross-cultural uncertainty data from the UK and Kenya. The results of the two focus groups suggested that there must be an evident commitment from the client and project manager. This applies at board level, and throughout the firm. The participants suggested that without guidance from the top there is a danger of the multicultural project team developing their own working culture within the project environment. Participants recognised that the principal objective of building cultural understanding through leadership is to manage cultural and cross-cultural differences that might emerge on a project effectively. As highlighted in this study, cultural differences among project teams can cause conflict, misunderstanding and poor project performance. It was therefore not surprising that the key areas that emerged from the verification process as significant were sorted and grouped as "managing cross-cultural complexity" and "managing cross-cultural uncertainty". These were found to be inter-connected and thus were reported together. Cross-cultural complexity and cross-cultural uncertainty must therefore be considered complementary.

7. Findings
The findings are presented below under themes drawn from the analysis. Where appropriate, descriptive quotes drawn from the interview transcripts have been used to express the views of the participants interviewed.

Theme 1: Managing cross-cultural complexity
In this particular theme, participants suggested that effective project leaders should understand the leadership style preferred by the project team so that the project leader's authority is respected. This finding shows that in a project environment the project leader must institute a supportive and positive culture. It is the responsibility of the project leader to ensure that this supportive culture is introduced and sustained. In order to minimise complexity and maximise team effectiveness participant (C) pointed out that it is helpful to be aware of personal problems staff might have:

> It helps to understand personal problems. For example we had a guy who split up with his wife and all of a sudden wanted to do extra hours. He felt that working more hours took his mind away from what he was going through. So I gave him more work within the project and that really helped him. Another guy wanted to do less hours for different reasons. So, understanding people's personal issues is important and to know as well that everybody is different.

In the above extract participant (C) demonstrated to the project team member the attitudes and behaviours he expected within the team, showing that an effective leader should be fair and consistent when dealing with team members. This can be achieved by not showing favour to any of them individually. In general, participants from Kenya and the UK described the value and need for a supportive culture through encouraging team members. They suggested that it can be achieved with an effective management style that "listens to" the concerns and complaints of team members. In addition leaders should have a positive "can do" management style to address the issues described by participant (C). Participants in Kenya felt that this approach has to be balanced by showing that there is an expectation that the project team will perform and meet their project objectives. However, from the findings it emerged that if an individual failed to meet the required objective then the project leaders would take disciplinary action. Participant (J) stated:

> You have to demonstrate to the team that if you don't deliver you will have to be disciplined. You have to come to an agreement with the team about what the disciplinary measures will be. It is not about imposing yourself but using your leadership skills to bring the best out of your team and respecting each individual.

Both sets of participants agreed that empathy can be used to give project team members confidence in carrying out their project jobs. It was common for participants in the UK to suggest that project leaders should demonstrate respect and consideration towards everyone in the team. Open communication and mutual responsibility among members is critical to maintaining respect and trust. Project leaders must practise and encourage loyalty to the team, and team members must be willing to deal comfortably with complexity, change, uncertainty, conflict, challenge and disagreement. However, the findings of the current study do not support previous research (Baccarini, 1996; Cleden, 2009). Participants in Kenya further noted that empathy is one element of social awareness. Interestingly, participants from the UK and Kenya suggested that empathy includes the ability to deal with uncertainty and change, and to value people from diverse backgrounds and cultures. Understanding project teams is a crucial success factor; knowing their preferences and background is even more important. In their study on the effectiveness of project governance in relational contracting, Henisz *et al.* (2012) advocate the adoption of three "institutional pillars" to understand and explain human behaviour in society. These three pillars not only regulate human behaviour but also can be used to predict people's responses in different situations.

The first pillar, regulative institutions, consists of formal laws, regulations and their enforcements. Regulative institutions provide a general framework regulating human behaviour in society. The other two pillars regulate human behaviour culturally. The second pillar, normative institutions, is concerned with how humans meet shared expectations in a social context. Under the third pillar, cognitive-cultural institutions, underlying elements of cultures, such as embedded beliefs and values, are enforced so those individuals who failed to comply with the regulative or normative institutions are punished through "cognitive dissonance".

Based on their analysis of project governance in light of relational contracting for civil engineering projects and the institutional pillars, Henisz *et al.* (2012) proposed an integrated project governance approach. They emphasised the importance of the latter two pillars and consider them to be complementary to the first pillar in effective project governance. While the first pillar enforces legal behaviour, behaviour that violates normative and cognitive-cultural institutions will be punished because that behaviour breaches the beliefs, values and expectations that are expected. While their study provided evidence to support the significance of the cultural aspects in effective project management, their propositions failed to take into account the dynamics and complexities in the project management process in which the values and beliefs are not consistently shared and accepted by all the participants.

As observed in this theme, participants from the UK suggested that if you understand the style of your project team you can easily anticipate their needs and even their future actions. When portraying an effective multicultural construction project team, the results show that participants agreed on two sets of variables: team output and attributes which characterise a multicultural team as a social entity. Findings indicate that building multicultural construction teams is about increasing cultural awareness, tolerance and eliminating conflict. This is similar to Connaughton and Marissa Shuffler's (2007) findings, which showed multicultural teams, face a threefold multicultural challenge: enabling a mixed group to work towards a common goal; maximising contribution of each project team member; and ensuring fair treatment for all irrespective of background. The summary of the findings are presented in Table II.

Theme 2: Managing cross-cultural uncertainty
Another area of concern relating to factors that contribute to the development of an appropriate culture in the integration project teams was uncertainty on projects during the diverging and converging phase of every cross-cultural interaction, for example, meeting contractors from different cultures. Gajendran *et al.* (2012) take into account the different philosophical and methodological approaches towards organisational cultures in a project context. In evaluating different perspectives on cultural studies, they make a distinction between the root metaphor perspective and the variable one. While the variable perspective considers culture as a variable that can be managed along with other elements such as operations and strategy, the root metaphor perspective advocates that organisation is a culture or a collection of cultures. A significant feature of this perspective is the recognition of the aspects which are "obscured, paradoxical and contradictory". Therefore, it is understandable that some beliefs and values are not shared by all the participants in the social setting of project organisations, because:

> Culture is a set of deeply held beliefs or underlying assumptions possessed by the individuals that make up groups in organizations […] the underlying cultural beliefs that manifest

UK participants	Kenyan participants
Project managers should understand leadership style	Project managers should integrate effective leadership styles
Achieve project and organisational goals through supportive culture	Achieve project and organisational goals through supportive goals
Participant (C) suggested that in order to minimise complexity and maximise team effectiveness, project leaders have to be able to resolve personal issues that team members face	
Project leaders should be fair when dealing with team members	Project leaders should try and be consistent when dealing with team members
Project managers should listen to team members' concerns	Project managers should integrate a can do management style that listens to individuals' complaints
	Participant (J) suggested that it is imperative to have disciplinary measures in place
Project managers should demonstrate respect towards team members	Project managers should demonstrate consideration towards all individuals of the team
Project managers noted that open communication is important	Project managers noted that mutual responsibility among team members is crucial
Participants noted that empathy includes ability to deal with uncertainty and change	Participants suggested that empathy includes valuing people from diverse backgrounds and cultures
Understanding the style of your project team allows you to anticipate your team's needs	Knowing your team requirements allows you to foresee future actions of your team

Table II.
Managing cross-cultural complexity

themselves in groups in an organisation may be in harmony (shared) or in conflict (unshared), sometimes displaying apparent ambiguity, paradox or contradiction. The level of harmony or ambiguity among beliefs, values, behaviours and artefacts will impact upon the emergent culture and shapes organisational environments in which the group operates (Gajendran *et al.*, 2012).

The definition and explanation Gajendran *et al.* provided for culture in project organisations signalled the complexity imposed by the ambiguous and sometimes conflicting cultural manifestations brought forward by the individuals in multicultural project teams. Within the context of this research, appropriate culture was found to be linked to positive project outcomes, alignment of organisational culture with strategy. Participants from the UK and Kenya strongly claimed that when you come across project teams with low uncertainty clear project outcomes have to be in place. Participants from the UK and Kenya believed that uncertainty on projects was one of the principal casual factors underlying project team intercultural integration. When asked how they went about addressing uncertainty, most participants stated that an uncertain situation is dealt with by gathering more data to reduce the culture and information gap.

As projects are becoming increasingly complex, participants from the UK suggested that project leaders must try to be effective cross-cultural communicators in order to achieve high levels of team performance. Findings indicate that effective interpersonal skills, team effectiveness, ability to deal with cross-cultural uncertainty and cultural compassion toward others are learned behaviours that can be improved through multicultural training. It was noted that understanding how to develop the performance of a culturally diverse project team is a central goal of modern construction

management research. Results indicate that uncertainty over projects is a complex issue. Although these results differ from some published studies (Cicmil *et al.*, 2009; Vidal and Marle, 2008), they are consistent with those of Cleland and Bidanda (2009).

The findings of this study suggest that uncertainty and complexity can be swayed by how the project team has been structured. Participants highlighted that uncertainty is another side of cultural complexity that project leaders need to manage proactively. Participant (A) suggested that definitions of project goals and objectives are important to manage uncertainty. Uncertainty can have various impacts in projects, which vary during different project phases and between projects. Impacts can be positive, negative and everything between. Evidence from this study shows that uncertainty causes challenges in projects together with other internal and external factors. However, participants argued that some projects could benefit from uncertainty. Uncertainty needs to be managed to gain full advantage from it. Before uncertainty can be managed, it needs to be discussed because of the sensitive nature of cultures. Participants from Kenya noted that in many cases cultures are very dynamic, which creates another challenge for construction project managers.

These findings seem to be consistent with other research, which found that cultural values are very dynamic (Mattarelli and Tagliaventi, 2010; Dekker *et al.*, 2008). As illustrated in Table III, both sets of participants acknowledged that the role of project managers has changed enormously within the last two decades. In order to deal with cross-cultural uncertainty, participants from the UK and Kenya suggested that project leaders must have superior multicultural and interpersonal skills. These results suggest that senior construction managers must understand the dimension of cultural uncertainty and understand the process required for assessing and preparing multicultural construction project teams. Table III presents the results of the second theme.

UK participants	Kenyan participants
Teams operating with a low level of require less project structure	Teams operating with a high level of uncertainty require consistency and clear articulation expectations
When dealing with an uncertain situation you have to collect the right information	In order to minimise uncertainty one has to gather the right data
In order to operate and manage a diverse environment, project leaders must try to be effective cross-cultural communicators	Project managers have to be competent cross-cultural communicators
Effective interpersonal skills and team effectiveness can be achieved through multicultural training	The ability to deal with cultural uncertainty and cultural compassion can be attained through multicultural training
Uncertainty is another side of cultural complexity	Uncertainty is another side of cultural complexity
Participant A noted that in order to manage uncertainty one has to define project goals and objectives	
The role of project managers has changed	The role of project managers has changed
Senior managers must understand the dimension of cultural uncertainty	Senior managers must possess a sense of process required for assessing and preparing multicultural teams

Table III.
Managing cross-cultural uncertainty

8. Conclusion

This study examined the impact cross-cultural complexity and uncertainty could have on construction team performance. The research engaged with the experiences of senior managers in Kenya and the UK. A number of noteworthy issues have been identified that have not been discussed in the construction management literature. The issues that have been identified relate to cross-cultural complexity and uncertainty. This study shows that the contemporary construction project manager is hardly ever afforded the luxury of retrospection. The coercions posed by cross-cultural complexity and uncertainty are real and immediate, and the stakes on a project are often high. As established from the reviewed literature and findings, the real challenges facing many of today's construction contractors who want to expand and become true players in the global market are to transform their business models and discover effective ways to integrate diverse multicultural construction teams.

The nature of delivering construction projects has changed. In today's global economy we have shifted away from the monochromic make-up of construction teams to one that is coloured by contractors from different locations. With this new multicultural make-up come differences in cross-cultural complexity, which in turn bring differences in leadership styles and many other cultural issues. Cultural awareness is now important if multicultural construction teams within multinational construction organisations are to capitalise on their potential. The literature reviewed reaffirmed the importance of cultural awareness in organisations (Brett *et al.*, 2006; Hall, 1966; Hofstede, 1980; Trompenaars, 1993). Although cross-cultural complexity and uncertainty do not always result in problems, their more delicate manifestations can lead to poor cultural integration.

It has been shown that nothing ever remains static in project work, and a multicultural project team works in environments filled with uncertainty and complexity where nothing exists in a permanent state. In order to manage cross-cultural complexity, project leaders need to be flexible in everything that they undertake. In their views about uncertainty, participants from the UK and Kenya agreed that uncertainty was one of the principal casual factors underlying project team intercultural integration. Participants indicated that an uncertain situation could be dealt with by collecting more data about the project to minimise the cultural and information gap that might emerge. It was found that uncertainty could have various impacts on a project. This accords with an earlier observation made in the literature reviewed, which suggested that uncertainty can make project situations appear weighed down with danger (Meredith and Mantel, 1995). Although uncertainty arises in many levels of the project, the art of managing uncertainty depends hugely on how much global project leaders are able to understand the realities of project situations. The literature reviewed reaffirmed that uncertainty can be grouped into two main classes: variability uncertainty, which is behind a number of common problems in construction projects; and indeterminate uncertainty, which always leads to indistinctness in construction projects (Cleden, 2009). While evidence from this research suggests that uncertainty results in challenges in projects, among other internal and external factors, some participants argued that some projects could benefit from uncertainty. It is worth noting that many levels of uncertainty will never undergo conversion to create an unexpected outcome. The aim is to focus on adequate effort in the areas of uncertainty that signify most risk and have the highest chance of developing severe problems. Some participants in the UK and Kenya argued that when

you come across low uncertainty project teams they demand less project structure, but with high uncertainty project teams they expect consistency and clear articulation to be in place. There is therefore a need for further work in this area to establish the influence of project leaders in managing multicultural project teams that have low and high levels of uncertainty.

In managing cross-cultural complexity, the results showed that effective project leaders should be able to understand the type of leadership style preferred by the multicultural project team so the project leader's authority is respected. The study shows that it is the responsibility of the project manager to set up a supportive and positive project culture. Effective leaders should be fair and consistent when dealing with project team members and this can be achieved by not showing any favour or partnership in the way they behave.

This study showed that cultural empathy can be used to give project team members confidence in carrying their daily project tasks. If project leaders are to manage global multicultural construction project teams smoothly they must be aware of their own personality and characteristics. It is vital for project leaders to learn how to control their characteristics and, most importantly, to use them selectively. Two basic methods could be applied: push and pull. The push method entails forming an opinion and then arguing about its merits; the pull technique depends on seeking the opinion of others. Project leaders applying the pull technique, need to form an opinion first and then use skilful questioning to encourage project teams to form the same view as they have. A project briefing session in one of the organisations suggested that the pull technique can take longer to lead to a decision, but a skilful project leader needs to use both methods, depending on the team or project situation.

The results of this study indicate that leaders of global construction project teams must understand the culture and environment they are working in. This finding is consistent with those of other studies, such as those mentioned in the literature reviewed by Brenton and Driskill (2011), Mattarelli and Tagliaventi (2010) and Dekker *et al.* (2008), which suggested that knowing the relationship between values and cultures can assist organisations to better understand intercultural values in teams. A clear message is that multinational construction organisations must cultivate work locations that support their project managers and teams.

This research has illustrated the views of project leaders on the extent to which cultural factors can influence poor performance of multicultural project teams. It provides a good foundation for understanding the influential cultural factors that affect international multicultural heavy construction engineering projects. Although the findings have universal applicability, it is important to conduct follow-up research validating the potential for using the results of this study to establish frameworks for cross-cultural project management practice in different organisations and contexts. In addition, there should be further research focusing on examining the factors that can be used to manage uncertainty in multicultural project teams. The findings have confirmed that multinational construction organisations cannot afford to ignore or overlook complexity and uncertainty in multicultural construction projects. They have also demonstrated that a better understanding of managing uncertainty will help minimise cross-cultural complexity in construction project teams. For a multicultural team to be effective, senior managers must acknowledge cultural issues openly and work around them.

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