

# Project Culture – The X Factor for Achieving Optimum Performance in Construction Projects?

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## ABSTRACT

The Construction industry has suffered from poor performance associated with adversarial and confrontational relationships for a long time. Much attention is devoted to technical solutions in an attempt to improve the situation whilst the impacts of the softer, non-technical issues, such as project culture, in achieving optimum project outcomes have tended to be ignored. This paper reviews the literature on project culture studies, especially in the construction context and reports the findings of preliminary interviews. The paper argues that, as the X-factor, project culture has a significant effect on the performance of construction projects.

**KEYWORDS:** Project culture, X-factor, performance.

## INTRODUCTION

Construction projects have traditionally been procured on the basis of price competition. This competition, compounded with the different objectives of the contracting parties and the practice of improper risk allocation, has created adversarial relationships and resulted in a poor culture (Latham 1994; Australian Procurement and Construction Council 1997; Egan 1998). As a result, cultural shifts are promoted to improve the effectiveness and competitiveness of the construction industry (Royal Commission into the Building and Construction Industry 2002); APCC 1997; Latham 1994; Egan 1998) and Lean Thinking has been identified as one of the agents to catalyze this cultural change (Kumaraswamy *et al.* 2002).

In recent years, the concept of culture has attracted a great deal of attention from both practitioners and academics in the construction industry. Some studies have been undertaken to investigate the influence of culture at the different levels (e.g. national culture, organizational culture) on construction management practice (Loosemore and Muslmani 1999, Chan and Tse 2003). In the construction context, cultural studies have also been undertaken at both the industry and professional levels. For instance, adversarial relationships, fragmented approaches and confrontational relationships have been identified as forming the culture within the construction industry (McGeorge and Palmer 2002). There are differences between cultures of the different professions involved in construction projects (Liu and Fellows 1999). However, there have not been many studies that have focused on the culture at the project level and its influence on construction project management practice. As a project-based industry, the construction industry needs more insights on the cultural issues at the project level.

The main objectives of this paper are:

- (1) to provide a critical review of the literature on project culture
- (2) to report research findings in preliminary studies; and
- (3) to provide suggestions for further research.

## LITERATURE FINDINGS

### *What is Culture?*

For human beings, culture is a set of learned mores, values, attitudes, and meanings that are shared by the members of a group. Hence culture is often one of the primary ways to differentiate one group from another (Duarte and Snyder 1999). Duarte and Snyder use the metaphor of an iceberg to describe the 'hidden nature' of culture:

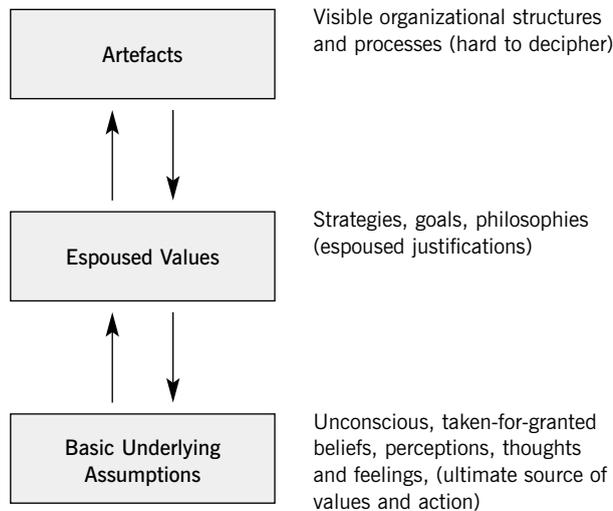
"... culture is ... the hidden "scripts" that people use to guide their behaviours. These scripts are created by repeated interactions between members of the group that create them. Over time, they become second nature and serve as shortcuts for guiding actions and making decisions. Like an iceberg, culture is often partially or totally hidden. It can, however, affect people's assumptions, behaviours, and expectations about leadership practices, work habits, and team norms (Duarte and Snyder, 1999, p.54)."

In this statement, culture refers to basic assumptions and beliefs, the deeper part of organizational culture that Schein (1985) described in his book, *Organizational culture and leadership*. This element of culture, although often hidden, always guides the behaviours and practices that we can observe.

There is growing body of literature about the culture of organization as it has been realized that the customs and traditions of a place are a powerful way of influencing behaviour (Handy, 1985). Contemporary studies in this field link organizational culture to the:

- effectiveness of the firm (e.g. Onken, 1999),
- performance of the organization (Corbett and Rastrick, 2001; Rashid *et al.*, 2003),
- implementation of total quality management (e.g. Sousa-Poza *et al.*, 2001; Maull *et al.*, 2001), and
- commitment of members of organizations (e.g. Lok and Crawford, 1999; Rashid *et al.*, 2003).

Schein (1985) argues that three different levels of organizational culture exist, namely artefacts and creations, values, and basic assumptions.



**Figure 1:** The three levels of organizational culture, (Schein, 1992, as cited in Denison, 2000, p. 5)

The surface-level behavioural norms and artefacts can be changed easily, but it is very difficult and time consuming to change the deepest levels of organizational culture, e.g. basic assumptions and beliefs (Jaap J. van Muijen *et al.* 1999).

### What is project culture?

The literature generally discusses project culture from the management perspective. Using one of the world's largest manufacturers of packaged goods as a case study, Palmer (2002) examined how an effective project culture could help to achieve business success. By changing the project culture, the project was highly successful in terms of it remaining a powerful tool and having helped the business become more successful. The key points for effective project culture include: defining clear objectives of the project, defining the clear processes and roles, and gaining commitment from team members. Palmer (2002) argues that clear objectives mean that the right projects are selected while clear processes and roles ensure that projects are carried out correctly, thereby leading to business success. This can be achieved by a well-defined product development process.

According to Gareis and Huemann (2000), developing an appropriate project culture is one of the project objectives during the project management process. It is the project manager's responsibility to shape a project culture that simulates teamwork and high levels of personal motivation as well as a capacity to quickly identify and resolve problems that threaten project work (Gray & Larson 2000; Widmen 2001). Korzilius (1988) stresses that it is very important to establish a unified and strong project culture for successful projects because the lack of a unified culture can be detrimental to the attainment of the overall project objectives. Being identified as one dimension of the project environment, the culture developed within a project is often a reflection of the leadership and organizational structure which is adopted for the project (Widmen 2001).

By conducting an exploratory research survey in various organizations and industries, Gupta (2003) reveals that the project culture is very different from the organization or department culture. Additionally, the project culture varies in different type of organizations i.e. matrix organization, functional organization, and project centric organization. The questionnaire survey also concluded that the project team, client environment, project objectives and parent organization type were critical factors to influence the type of project culture.

With reference to the well-recognized definition of organizational culture (e.g. Hofstede 2001, Schein 1985), project culture is defined as:

"the shared values, basic assumptions and beliefs that the participants involved in a project hold that determine the way they process the project and the relationship with each other in the project environment" (Zuo & Zillante 2005, p.357)

### Project culture research in the construction industry

In the construction context, there are a number of statements regarding project culture in construction projects. However they do not go on to measure or assess the impact of project culture. These statements include:

- a constructive project culture should be developed in order to produce effective project teams (Walker 2002);
- "... the advantage of a strong project culture in construction projects (is) enhanced effectiveness ... that contributors learn to live together and are less parochial and that it reconciles conflicts" (Newcombe 1997, as cited in Walker, 2002, pp.129).
- Kwan and Ofori (2001) point out that the project prehistory and prior working relationships have the most significant impact on project culture.
- An ideal project culture in construction projects should be cooperative and collaborative (Cooperative Research Centre (CRC) for Construction Innovation Australia 2004; Phua 2004).

The research conducted by the CRC for Construction Innovation (2004) suggests that the success of projects, particularly alliancing projects, is predicated on developing a collaborative project culture. Using case studies, interviews and questionnaires, CRC for Construction Innovation researchers Rowlinson and Cheung (2004) argue that there is a mismatch between organizational cultures of the investigated government departments and the culture of the project which they are working for; "project personnel expect to operate in an environment displaying a task culture but perceive that they are working in a role culture" (CRC newsletter June 2004 Issue 10).

The literature shows that the project culture may vary with the different procurement approach adopted in the construction project. The traditional approach to procure facilities has been criticized for being responsible for the adversarial behaviour and confrontational relationships within the project team, which resulted in the recommendations from both Government authorities and academics towards cultural shift. In the past two decades, collaborative procurement approaches (e.g. partnering and alliancing) have achieved much success in the industry. Project alliancing has its typical culture as illustrated by a commitment based on openness among all parties, an understanding of each other's business drivers and the alignment of individual interests (Halman and Braks 1999). Halman and Braks (1999) further pinpointed that co-operation, creativity, efficient communication, joint interest and an informal atmosphere will stimulate the problem solving process in finding innovative solutions and to produce exceptional results. Most importantly, an understanding of alliance project culture is an imperative (Davis 2004).

The literature indicates that appropriate project cultures do contribute towards the success of projects. The relationships between project culture and project performance will help the project managers and the stakeholders involved in a construction project to improve the effectiveness of the project (team) and hence the possibilities for successful outcomes.

## PRELIMINARY INTERVIEWS

### The proposition of the interviewees

A total of 27 respondents took part in the preliminary interviews. Of these, 21 were industry professionals that had been involved in a number of construction projects. Their roles varied from: client, main contractor, architect, and quantity surveyor to project manager. The other six were from academics with many years' experience in the construction industry.

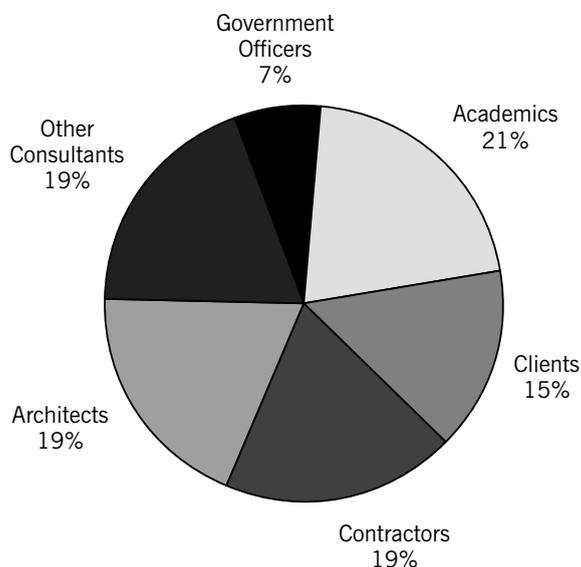


Figure 2. The profiles of preliminary interviewees

For the industry interviewees, the majority of them (18/21) have more than 15 years professional experience in the industry. Accordingly, they are in a good position to answer the questions asked in the interviews.

### Why select them?

The respondents who were involved in the preliminary interviews came from both industry and academia. The practitioners were selected from the major companies that provide various services and functions within the construction industry in South Australia. There are a number of organizations as well as specialists involved in a typical construction project. In order to obtain a more complete picture of the culture at the project level in the construction context, a minimum of two persons from each category (e.g. client, main contractor, architect, etc.) were selected for the preliminary interview.

Six academic staff that work for various institutions also took part in the preliminary interviews. They were invited to participate in preliminary interviews because the author believed that they could provide valuable comments and inputs by viewing the research topic from an academic perspective, which may be different from that of a practitioner. Fellows and Liu (1997) also encourage discussing the instruments with the supervisor and other researchers as a useful supplement to the "piloting", as it provides a research-oriented view of the questions, the components and assembly of the questionnaire and probable approaches to the analysis of responses. Interestingly, all the academics had many years' experience in the construction industry prior to becoming academics. This peer review process avoided the research instrument being viewed as a purely academic exercise.

### The structure of preliminary interview questions

Each interview lasted at least one hour. In each case, the lead author spent the first five minutes on explaining the background of the research (e.g. topic, research question and objectives).

The terminology (such as the definition of the project culture in this study) used in this study was also explained to the respondents before starting the interview. The interviewees were asked to use their experience to make comments on cultural issues at the project level. Some of the questions asked in the interviews included:

- 1) Do you believe there is an identifiable project culture within the project environment?
- 2) What components constitute an appropriate project culture?
- 3) Which party should be responsible to develop and to maintain an appropriate project culture?
- 4) What are contributing factors towards an appropriate project culture?
- 5) What are the benefits of an appropriate project culture for construction projects?
- 6) What are the features of trust?

Interviewees were encouraged to comment on the project culture issues by referring to projects they had been involved in. At the end of the interview, respondents were given the opportunity to any other issues that they felt were important. Therefore, the interviewees were free to express their ideas on the issues about culture at project level.

## RESEARCH FINDINGS

The collective responses over a number of interview questions are summarised as follows.

### (1) Project culture exists in construction projects

All the interviewees agreed that culture at project level does exist and all participants need to pay attention to it. They all agreed that project culture would significantly influence the performance of construction projects. They stressed that teams with which they had worked had performed better and that this was due to an appropriate project culture (e.g. teamwork and trust).

### (2) Current situation of project culture in the construction industry

Most interviewees claimed that an adversarial project culture dominates the industry. The 'win-lose' culture is very pervasive, especially in construction projects using traditional procurement systems. One interviewee stated that "... the construction industry is not a nice industry, ... it is like a war. This industry is not very profitable and does not invest in R&D and training". In contrast, all interviewees highlighted that collaborative approaches, like partnering and alliancing would help to create a positive culture within the project team.

### (3) The features of an appropriate project culture

The common features of an appropriate project culture that were frequently mentioned by the respondents included:

- mutual trust and respect,
- open and effective communication,
- collective responsibility and timely decisions,
- no blame, no dispute,
- early warning of problems,
- honesty and understanding each other,
- willingness to help each other,
- etc.

Interviewees stressed that this appropriate project culture should be developed from the beginning of the project and should be sustained during the project process. They suggested that this project culture could be strengthened with the assistance of continuous training and workshops. It is interesting to note one interviewee used a metaphor to illustrate the importance of 'no-blame' culture: "We should not blame each other. Just as in a footy match, if one team-mate dropped the ball occasionally, other team-mates will not blame him for making a mistake. Rather, they should encourage him to pick up the ball and to keep going."

**(4) The procurement approach and the project culture**

It is interesting to note that all interviewees stressed that the type of culture in the construction project was, to a significant extent, decided by the procurement approach used. For instance, the traditional hard money contract was identified by interviewees as the most ineffective procurement approach in terms of shaping an appropriate project culture. Similarly, the collaborative procurement approach, such as relationship contracting (i.e. partnering and alliancing), helps to foster a positive project culture, featured by collaborative and co-operative relationships and a high level of mutual trust.

**(5) The features of trust**

According to the interviewees, the key elements of trust are open discussion, appreciating each other's expectations and values, mutual support, and straight talk. Almost all respondents indicated that all participants should keep their promises in a project. In other words, consistency is very important as an essential feature of trust.

**(6) Benefits of project culture**

There is a consensus about the need for a high level of trust within an appropriate project culture so that the collaborative relationship between participants can be maintained. An appropriate (positive) project culture with a high level of trust should be developed at the beginning of the project so that the project team members can enjoy the advantages. The initiation of trust and cooperation should, at the very least, be introduced during the tendering process.

According to interviewees, the characteristics of better relationships include collaboration, co-operation and a high level of trust.

**(7) The KEY contributors to an appropriate project culture**

All respondents indicated that all project team members should contribute to the development of an appropriate project culture. Therefore it is very important to choose the right person to build the project. "Marriage" was used by some interviewees to illustrate the importance of selecting the appropriate party – "... you need to spend a relatively long time with other parties in one project. Hence by choosing a favourable party, a lot of trouble can be avoided." In particular, the client is identified as the most important contributor to an appropriate project culture as the client's expectations and values can easily spread to other participants.

In summary, the preliminary interviews concluded that an appropriate project culture does contribute towards improved working relationships among project participants and to the success of construction projects. Similarly, the collaborative procurement approach helps to shape the positive project culture and to achieve better project outcomes. It is reasonable to assume that there are links between the project culture, the performance of the project and the procurement approach. The conceptual research framework is illustrated in Fig.3. The authors argued that, as the X factor the project culture acts as the catalyst within the project team to motivate their commitments towards optimum project outcomes. An appropriate project culture provides better opportunity to achieve better project outcomes.

**CONCLUSIONS AND FUTURE RESEARCH**

The literature review indicates that different project cultures will have different impacts on the performance and outcomes of the project. Construction projects have long been procured on a price competition basis. This common lowest tender strategy has prevented the project team from obtaining the reasonable benefits that stem from partnering. The contractor may seek ways to recover his loss due to the ill-apportioned risks during the contract, and thus endanger the principle of trust. Therefore there is a need to shift the adversarial culture to a more positive and appropriate project culture with an element of trust being built into it.

This paper reports both the literature findings and the research findings of the preliminary interviews. A number of preliminary interviews were conducted to help determine what industry professionals and academics think about the project culture and to develop the conceptual research framework used in this study. Based on the findings, the paper argues that the project culture plays a major role in pursuing the optimum performance of construction projects.

The next stage, will involve an extended literature review on project culture studies in order to develop the research instrument. A draft questionnaire will be designed to target the culture at the project level based on the literature findings. The questionnaire will then be pilot-tested by sending it to a number of industry professionals and academic staff. Subsequently the questionnaire will be revised based on the comments made in the pilot studies.

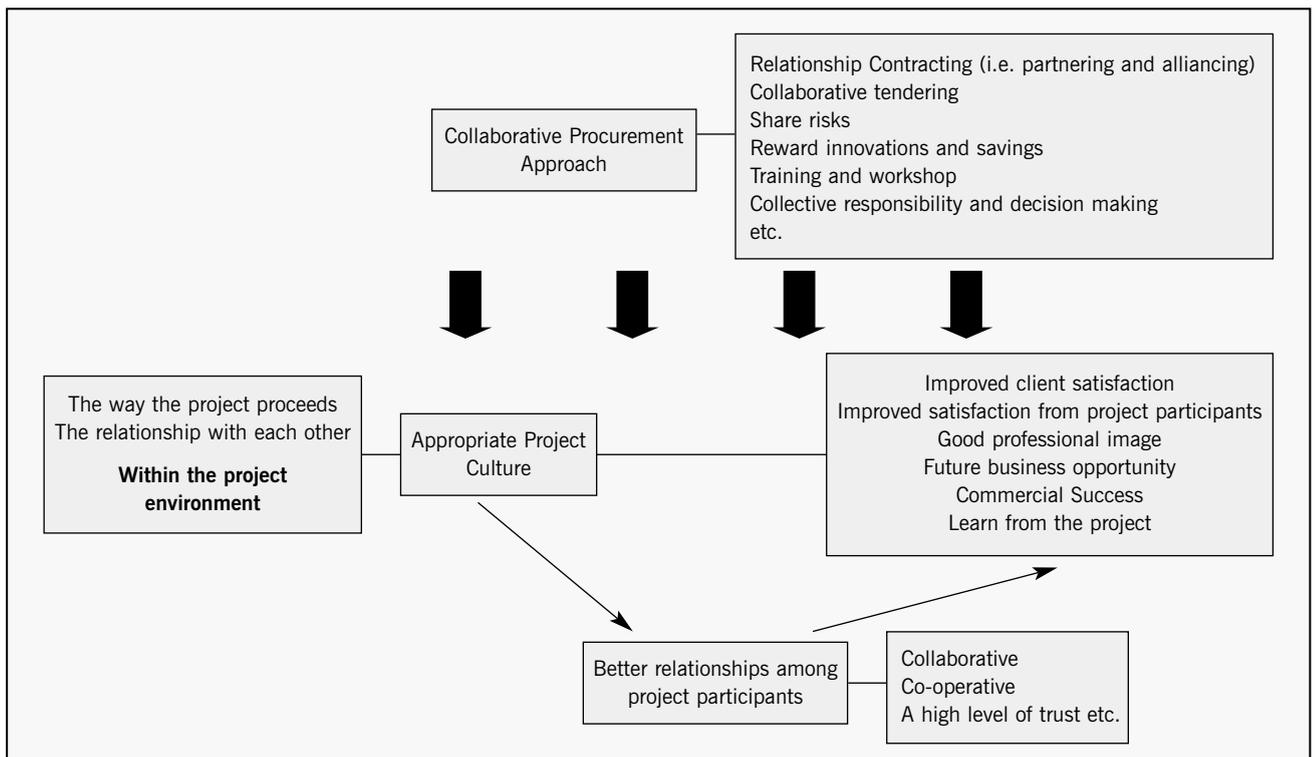


Figure 3: Conceptual research framework

A questionnaire survey of a relatively large population will then be conducted in order to obtain empirical evidence about the project culture in the construction context and hopefully linking project culture to the performance of the project. The participants that were involved in selected case studies will be interviewed to determine more in-depth information about the culture in their projects.

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