

NATURE OF EXISTENCE OF PUBLIC SECTOR CONSTRUCTION PROJECT CULTURE: AN EXPLORATORY CASE STUDY

Aparna Samaraweera*

Department of Building Economics, University of Moratuwa, Sri Lanka

Sepani Senaratne

School of Computing, Engineering, and Mathematics, Western Sydney University, Australia

Y.G. Sandanayake

Department of Building Economics, University of Moratuwa, Sri Lanka

ABSTRACT

Cultural differences cause conflicts among construction project participants, deterring success of the project. Thus, understanding the nature of existence of construction project culture can assist in achieving better project management. An exploratory case study was adopted to develop propositions with this regard for further research purposes. The research was limited to study the culture of a public sector building construction project. Semi-structured interviews with nine key project participants and observation of two progress review meetings were used as the data collection techniques. As per the research findings, construction projects being temporary organisations, culture was basically emerged focusing on clearly defined project objectives. In addition, construction project culture could be emerged and transferred through continuous interactions and socialisations with the time. Thus, time became a concern for proper internalisation of the cultural aspects. Project members at high authority levels contributed more for emergence and transfer of cultural aspects. Shared behavioural norms were not much popular in the studied project culture. Highly differentiated professional sub-cultures such as; client, contractor and consultant were available. Fragmented behavioural norms were identified creating conflicting and paradoxical situations within the project. These findings can be further confirmed by replication in multiple case studies.

Keywords: *Behavioural Norms; Construction Project Culture; Culture Emergence; Fragmentation; Sub-Cultures.*

1. INTRODUCTION

The construction industry has its run through different human interactions along the design and construction phases of a construction product. Hence, behaviour of each and every individual within a project is significant to its success. 'Culture' becomes a major factor owing to the behavioural differences among these individuals, which requires proper attention by the management (Tijhuis, 2011). Cicmil and Gaggiotti (2014) criticise the slippery use of culture in project management practices and highlight the necessity of learning culture as a context-dependent social relational practice.

The early elaboration of organisational culture as 'the way we do things around here' by Bower (1966, p.22) provides a simple, but, a powerful definition on culture focusing on behavioural manifestations. Zuo and Zillante (2005) describe construction project culture as shared beliefs, values and basic assumptions, which determine the way the project is processed and the nature of relationships to be built up among members. All these definitions on culture attempt to use different manifestations such as; behaviours, practices, beliefs, values, basic assumptions to describe culture. Further, it is apparent that the use of the term 'shared' (Zuo and

*Corresponding Author: E-mail - aparnas@uom.lk

Zillane, 2005) is to indicate culture as unifying and integrated phenomenon among the members in the construction project cultural context. Despite of a dominantly shared culture, Kumaraswamy *et al.* (2002) highlight that construction project culture consists of several sub-cultures. Further, according to Gajendran *et al.* (2012), there could be ambiguities and paradoxes in meanings created by cultural manifestations, contributing to construction project culture, which are mostly disregarded by many researchers.

Above discussed theoretical aspects create doubts on the nature of existence of project culture in construction context. Thus, the aim of this paper is to bring in empirical evidences on how construction project culture exists, in order to build up propositions for further research. The findings of this paper is based on a public sector project.

2. NATURE OF EXISTENCE OF CONSTRUCTION PROJECT CULTURE

Construction projects constitute of members from different organisations working together for a specific period of time and considered as temporary multiple organisations (Fellows *et al.*, 2007). Construction project organisations hold the characteristics of short life organisations, which are operating for a specific purpose and specific time duration (Ankrah *et al.*, 2005).

Meudell and Gadd (1994) elaborate that it is in 'long-run organisations' that believe culture should be gradually developed and transformed consuming long durations and gradually build up on the history created within the organisation. However, 'short life organisations', such as project organisations, which are with a specific purpose and time duration, should develop a culture by focusing on a clearly defined mission. Such cultures mostly do not acquire histories generating myths, rituals, rites and so on. Further, Schein (1983) mentions that culture will not develop and embed until the members start surviving by overcoming different crisis and critical situations within such a cultural context.

Schein (1983) and Marrewijk (2007) highlight the contribution of higher authority level members can make in creating a specific culture. Marrewijk (2007) brings in empirical evidence from a mega development project, which had clearly visible two cultural episodes called 'Gideon's Gang' and 'Diplomats', solely due to the management style of the higher project management. More importantly, Schein (1983) stresses that group leader tends to shape up culture using his/her personality.

The culture could get transferred when new members join the setting. Hence, transfer of culture is defined within this paper as the actions of familiarising and inculcating the existing cultural aspects by newcomers. Ashforth and Mael (1989) describe that 'social identification' of a member is about referring oneself to a social category, while 'internalisation' is about incorporating or believing the values, attitudes and other cultural aspects of the social entity to oneself as guiding principles. Thus, transferring culture to a new member has to be about internalising the cultural aspects. According to Schein (1984), for a cultural aspect in an organisation to be passed on to newcomers, such cultural aspects should have helped solving problems in organisational environment. Existing members of the organisation should have received proven results by having such artefact, practices, values or basic assumptions. In order to pass them to the newcomers as valid cultural features, which are worth being adopted. However, the question is 'can such an established culture exist in construction project context?' In order to search answers to this question, it is worth looking at the ways project culture is explained by researchers.

Different manifestations are used by different researchers to describe a cultural context. This exhaustive list of manifestations includes, but not limited to; symbols, stories, rites, rituals, customs, relationships; behaviours, norms, attitudes, values, basic assumptions (Hofstede, 2001; Martin, 2004; Zuo, 2008; Gajendran *et al.*, 2012). Martin (2004) states that it is misleading and too simple if a researcher tries to elaborate a cultural context only using one of the manifestations. Kappos and Rivard (2007) group these cultural manifestations as; cultural forms, practices including both formal and informal practices and content themes. In addition, Schein (2004, 1990, 1984) describes that these cultural manifestations can be identified in three levels as; 'visible artefacts' in the primary level, 'espoused values' in the next level and 'underline assumptions' in the highest level giving the proper interpretation to the exact organizational culture. According to Schein (2004), manifestations at higher levels provide better interpretations of culture.

Further, Martin (2004) explains that culture in a given group is the patterns of meanings that link the aforementioned manifestations together; some in harmony as shared meanings (integration perspective), some shared only in sub-groups (differentiation perspective) and some in mere paradox and conflicts (fragmentation

perspective). Thus, Martin (2004, 2002) strongly criticised the attempts in cultural research trying to describe culture only using the integration perspective on culture.

However, many researchers in construction project cultural research has used the integrated perspective or the shared view on culture. For example, Zuo (2008) has carried out a research study on project culture in Australian and Chinese construction industries. According to Zuo's (2008) proposed project cultural model, construction project culture consists of five dimensions as; Integrative, Cooperative, Goal-oriented, Flexible and People-oriented.

Some studies on construction project culture are based on the differentiation perspective highlighting the effect of different subcultures on project culture. These sub-cultures are mostly based on national, industry, organisational and professional cultures. Ankrah and Langford (2005), who studied on architectural and contracting organisations, explain that major differences exist in these two organisation types not only in its structure but also in issues related to people. Hence, it is apparent that organisational and professional cultures have an impact on the construction project culture. Further, Kumaraswamy *et al.* (2002) elaborate that 'organisational', 'professional', 'operational' and 'individualistic' sub-cultures as the principal elements that come together to evolve the culture within a construction project. Further to authors, a number of components contribute to each sub-culture, where one or more sub-cultures may dominate, depending on their 'relative strengths'. However, this model has not yet been empirically proven.

Different researchers have used fragmentation perspective for elaborating culture in different industrial contexts such as in retail (Harris and Ogbonna, 1998) and information technology (Kappos and Rivard, 2007). Gajendran *et al.* (2012) too highlight the possibility and advantages of researching the fragmentation perspective in construction project culture to understand conflicts and ambiguities within construction projects. However, there is dearth of literature in construction research arena, which incorporates construction project culture using all three perspectives (i.e. integration, differentiation and fragmentation), which would be observed empirically in this research. The next section elaborates the methodology of this study. Above discussed theoretical aspects create doubts on the nature of existence of project culture in construction context. Thus, the aim of this paper is to bring in empirical evidences on how construction project culture exists, in order to build up propositions for further research. The findings of this paper is based on a public sector project.

3. METHODOLOGY

The aim of this study is to explore the context of construction project culture in public sector projects and develop propositions for further study. Thus, exploratory case study was selected as the research strategy of this research. A single case was selected as a 'critical case' in a manner of theory testing. As elaborated by Yin (2009, p.47); "A single case, meeting all of the conditions for testing the theory, can confirm, challenge, or extend the theory. The single case can then be used to determine whether a theory's propositions are correct or whether some alternative set of explanations might be more relevant". The selected case to be a critical case, it had a project team set up with a contractor who had previous working experience with the consulting organisation and the client was new to both the contractor and the consultant.

Unit of analysis was the construction project culture. A public sector building construction project in Sri Lanka was selected as the case. Data collection techniques included; nine semi structured interviews and observation of two progress review meetings. Interviewees included; three members from the client's representatives [Deputy Director (Corporate Management), Technical Officer (Maintenance), Procurement Assistant], three members from consultant's representatives (Project Manager, Project Architect, Project Quantity Surveyor) and three members from contractor's perspective (Construction Manager, Site Engineer, Project Quantity Surveyor).

According to Schein (1983; 1984), patterns of underlying basic assumptions of a cultural context could be realized through analysing the reactions, behaviours and solutions bring forward by the group members for internal integration problems (language, boundaries, power and status, intimacy, rewards and punishments and ideology) and external adaptation problems (strategy, goals, means of accomplishing goals, measuring performance and corrections) of the group. Thus, the interview guideline and progress review meeting observation guideline consisted of questions inquiring and observing behaviours and solutions to internal integration problems and external adaptation problems to capture the behavioural norms and basic assumptions of the project team members. However, as this paper is part of a bigger research study on unearthing basic

assumptions of construction project culture in Sri Lanka, detailed procedure of analysing basic assumptions would not be presented.

4. CASE STUDY FINDINGS

The empirical study was conducted using a six-storied government office building construction project (Project XYZ) for a ministry, procured under traditional procurement method with measure and pay contract. The project team consisted of a government consultancy organisation and a private contractor organisation. Construction contract sum of the project was Sri Lankan rupees 1317 million and duration was 21 months. The physical construction progress was 65% by the time of data collection.

Project XYZ indicated some evidence on how contractor and consultant believed on emergence and transfer of the cultural aspects in construction project context. Contractor held a strong basic assumption that *“project culture was emerged and transferred with time, with continuous interactions and socialisations among team members”*. For example, the contractor had past experience with the consultant of project XYZ in a different project. Thus, contractor had appointed the same team of contractor’s personnel for project XYZ as a strategic decision. Moreover, two senior members of the contractor’s organisation (project coordinator and the construction manager) were appointed for this project despite the lesser contract sum of project XYZ (Sri Lankan Rupees 1.317 Billion) compared to the previous project (Sri Lankan Rupees 4 Billion) including an opportunity cost. Despite the opportunity cost, contractor had believed that it would be much easier to work and provide a better service and output to the client with a known team of consultants, where the cultural behaviours were properly internalized. Further, site engineer of the contractor mentioned that they had a better knowledge on working procedures of consultant’s staff than the majority of the site staff of consultant who worked on contract basis. For example, in some situations, contractor was explaining the consultant’s variation procedures to contract-basis site staff of consultant. Thus, this emphasis on previous experience with team members was in line with the explanations that culture would not develop and embed until the members start surviving by overcoming different crisis and critical situations (Schein, 1983) to internalise (Ashforth and Mael, 1989) properly.

Although contractor held the assumption that *“internalized cultural knowledge was beneficial for project success”*, consultant seemed not holding the same assumption. Thus, consultant had ended up appointing completely a new team of direct consultants for project XYZ except few members (Project Quantity Surveyor) from the previous project. Consultant’s view was that when the project objectives were defined well and when every member knew the role expected from each member, they were not required to consider previous knowledge on cultural behaviour of the team members. Further, client also held a similar assumption to the consultant. They trusted the consultant as the party bounded to provide them with the required consultancy service for them. This belief was in line with the argument by Meudell and Gadd (1994) that short life organisations develop a culture by focusing on a clearly defined mission. The Consultant Project Architect justified the above stating; *“Project being short term is not a problem for working comfortably. What is expected from each party is clearly defined in construction contract and consultancy agreement at the beginning of the project. We can simply operate successfully in such an environment.”*

Although the consultant did not consciously had a belief on advantages of internalised cultural knowledge, during interviews, the members of the consultant’s representatives mentioned how easy it was to work in an environment, when project culture had internalised to the team members over mere cultural identification. For example, consultant project quantity surveyor mentioned how the transferred cultural aspects due to working history with the contractor had been beneficial to the project working environment stating: *“They respond quickly compared to other contractors for quantity surveying aspects. In previous project, we had to push them for documentation, but now they submit everything correctly. Now they know what we require. If it is a variation, sample documents, shipping documents and approved drawings are submitted very quickly. Mistakes are really less. Also, they attend for any missing document urgently without any hesitation.”*

All team members including; client, consultant and contractor believed that culture being emerged and transferred through the ‘key people’ in a project, who are at higher levels of the hierarchy with more authority. Contractor expected that project operations would have been easy if, at least the ‘key people’ from the previous project had involved with project XYZ. When consultant project architect was questioned on how the process of familiarising and introducing newcomers to the project team happened, she mentioned that such a special induction procedure was not adopted or required since the senior members within the project never changed,

stating; *“The key people coming to the meeting did not change up to date from client, contractor or consultant. Junior Quantity Surveyor was changed, but Senior Project Quantity Surveyor remained same. Since senior position was not changed, no issue occurred. This was because, senior person knew what was happening in the project. A similar thing was experienced when Junior Structural Engineer was changed.”*

This was an evidence that it was the senior members or the members with higher authorities who had decided upon the behavioural norms, values and basic assumptions in a cultural context and those are transferred to the members down the hierarchy. Similarly, as indicated by the site engineer, contractor had not introduced every member of the contractor’s team to the client. Only the key members were meeting up with the client and they never tended to change those members. This revealed that cultural aspects of client could get transferred to the contractor’s team through the key members of the contractor only. Thus, this finding further confirmed the finding of Marrewijk (2007) and Schein (1983) that members at higher authority levels contribute more for culture creation.

Following empirical evidence related to the existence of three perspectives in a public sector construction project were observed during the study.

Integration Perspective of Project Culture: The behavioural norms of each sub-group (contractor-consultant-client) noted by other sub-groups are presented in Table 1. According to Table 1, commonly shared or integrated behavioural norms by all three groups were not apparent. However, it was visible through interviews and progress review observations that every sub-group tried to defend themselves as a group, every group had matters, which they thought not suitable disclosing to other parties and used construction contract and consultancy agreement as the ultimate defending arms for oneself.

Differentiation Perspective of Project Culture: Highly differentiated behavioural norms, demonstrating clear professional sub-cultures for the client, contractor and consultant were popular among the project team members (see Table 1). Only three instances were identified within this case study having commonly agreed sub-cultural behaviours, as highlighted in italic letters in Table 1. These included; contractor believing written communication modes as essential, contractor agreeing on unrealistic targets for the project without proper justifications and client trying to control the project deviating from the contract. Thus, how each sub-cultural group identified the other sub-cultural group was relative to their own assumptions on the other party. In addition, many behavioural norms were interrelated. An example, highlighting both situations is given subsequently.

Consultant Project Architect mentioned that they have a clear division among members as consultant and contractor. This was because, consultant thought that contractor was always **looking for lapses from consultant to turn them into claims and earn**. Consultant was not happy with the behaviour of contractor writing letters to inform the lapses of the consultant to use them for future claims. This was highlighted by both the Project Manager and the Project Architect. As mentioned by the Consultant Project Architect; *“All consultants work together as a single entity. Contractor is kept separate because, they always send letters for any small delay of consultant or client targeting a claim. Once they sent something like a warning letter over some instructions to be issued by us. We realised that they were targeting a claim and issued the relevant architectural and structural drawings very swiftly. We quickly detect such behaviours and act accordingly.”* This had made the consultant be cautious with their work all the time and had lack of trust among the two parties. This lack of trust among the contractor and consultant had been identified by the client as well. This behaviour between contractor and consultant had driven them towards **formal written communication modes being the most popular between the two parties**. Contractor believed that their contractual rights could be protected only by getting instructions in black and white. This was because, written instructions by means of letters, drawings, log notes and meeting minutes provided them with proof during any legal action. However, client and consultant had a very cordial relationship where, **client had always depended on and kept faith on consultant**. Informal communication modes such as telephone conversations were the most popular among client and the consultant.

Table 1: Behavioural Norms of Contractor, Consultant and Client

	Indicated by Client	Indicated by Consultant
Behavioural Norms of Contractor	<i>Contractor was too formal in behaviour requiring all instructions in writing</i>	<i>Formal methods of communication were essential to Contractor</i>
	<i>Contractor was used to agree with impractical targets without justifications</i>	<i>Contractor promised for unrealistic targets deliberately to satisfy the client</i>
	Contractor tried to conform and not to innovate	Contractor tried to pass all responsibilities and blames to the consultant
	Continuous monitoring by client and consultant was essential to increase productivity of the contractor	Contractor usually brought in excuses when any important goal was not achieved
	Contractor had no trust on consultant	Contractor tried to deliver the quality as expected by the consultant
	Contractor was too stubborn in behaviour Contractor lacked attention on health and safety at site	Contractor targeted for additional claims in every situation
	Indicated by Client	Indicated by Contractor
Behavioural Norms of Consultant	Government consultants were more disciplined and took more responsibility	Consultant was careless and lacked integration in works by different professionals
	Consultant tried to pass responsibility to contractor	Decisions made by the consultant were impractical
	Consultant responded quickly to client	Consultant tried to win client by whatever the means
	Consultant always respected client	Consultant was very slow in response to contractor
	Consultant had no trust on contractor	
	Indicated by Consultant	Indicated by Contractor
Behavioural Norms of Client	<i>Client tried to control the project deviating from the contract</i>	<i>Client tried to control the project deviating from the contract</i>
	Client respected the consultant	Client only looked for mistakes
	Convincing practical aspects of construction to the client was difficult	Client only pushed on the target and did not look on the real problems.
	Client expected consultant to take legal risks	
	Client tried to achieve every scope possible within the contract in terms of variations	
	Decisions made by public clients were uncertain mostly	
	Client had faith on consultant since consultant had a tough control on project cost	
	Client tried to motivate the contractor and consultant by continuous pressing	
	Client did not intervene consultant's role and depended on consultant	

Fragmentation Perspective of Project Culture: Several fragmented behavioural norms were identified among the three sub-cultural groups. These were the behaviours working against each other creating tension among sub-cultural groups. For example, **client complained that contractor was too stubborn and inflexible in behaviour and required continuous monitoring by the consultant and contractor to increase their productivity.** Similarly, contractor complained that **client tried to control the project deviating from the contract.** Thus, this had created a great tension and disappointments between client and the consultant. This behaviour of client was further confirmed by the consultant as well by indicating that client tried to motivate the contractor by continuous pressuring. The statement by the Technical Officer (Maintenance) of

client; “*Contractor had the problem of lack of labour force. When we stressed from here only they increased the labour force. However, we were unable to get the speed we anticipated.*” justified that. Contractor was disappointed with this tight controls laid in by the client. For example; Construction manager mentioned that: “*Client tends to shout out; ‘we want you to get this done’, ‘why don’t you do it quickly’ . Once during a meeting, I happened to remind the client that we are governed by the contract and not by client or consultant. All the parties should obey the contract and then things get controlled.*”

In addition, some fragmented behaviours were noted between the consultant and the contractor too. Contractor had understood the **consultant as careless and lacked in integration of works by different professionals** within the consultant’s sub-cultural group. An evidence for this behaviour was when, Project Design Engineer had designed structural details for massive round shaped external piers given by the Project Architect, mistakenly assuming a square shape. Moreover, contractor had constructed to the wrong detail of the design engineer. Subsequently, consultant had an argument over the issue that the mistake could have been identified by any prudent contractor by comparing the architectural and structural details. In the same way, consultant always complained **contractor having an adverse behaviour of trying to pass all the responsibilities and blames to the consultant**. This demonstrated how the fragmented behavioural norms collided creating tension between parties.

Thus, construction project culture was more in line with differentiated and fragmented views, than with the integrated view described by Martin (2004). This was due to highly differentiated professional sub-cultures with number of differentiated behavioural norms. Awareness of such differences could have helped removal of the misunderstandings among the sub-cultural groups as indicated by Gajendran *et al.* (2012). Further, awareness of fragmented behavioural norms could have helped removal of formal irrationalities deterring the progress of the construction project. In overall, these case study findings were related to a construction project operated under the traditional procurement method with measure and pay contract. Thus, findings could differ in other procurement arrangements such as relational type of contracts. In addition, Schein (1984) indicated that behavioural norms of individuals or groups in a culture are visible, but often not decipherable. As identified from this case study, it was difficult to provide reasons for the behavioural norms of the three sub-cultural groups. However, more insight into these behavioural norms of the sub-cultural groups could be attained by learning into the other cultural manifestations such as values and basic assumptions of the team members as described by Martin (2004).

5. CONCLUSIONS

The aim of this study was to explore the nature of existence of project culture in a public sector building construction project through an exploratory case study and develop propositions for further study. Construction project culture emerged and transferred with time with continuous interactions and socialisations. Transfer of culture was effective with proper internalisation of culture, which materialised with previous working history of the team members. This was because, it allowed continuous interaction and socialisation for a longer period. In addition, construction projects being short life organisations, project culture emerged focusing on clearly defined project objectives. Further, project culture was emerged and transferred through team members at higher authority levels.

Behavioural norms of construction team members were identified by studying how each sub-cultural group viewed the behavioural norms of other sub-cultural groups. How each sub-cultural group had identified the behavioural norms of other sub-cultural groups drastically differed and mostly related to their own assumptions about the other party. With regard to the existence of construction project culture, shared or integrated behavioural norms were not much popular within the selected case. Differentiated behavioural norms were clearly visible forming contractor, consultant and client professional sub-cultures. Many behavioural norms were existing in an interrelated manner. Several fragmented behavioural norms were available creating tension among contractor and client and contractor and consultant.

However, merely studying the behavioural norms of the construction project team members did not provide more insight into the construction project culture. These reasons could be hiding deep behind the values and basic assumptions of the project culture. Thus, learning such manifestations could assist elaborating deep into the construction project cultural context, which requires further research in this context.

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