A STUDY OF THE ROLE OF MIDDLE MANAGEMENT IN DEVELOPING INNOVATION CLIMATE IN CONSTRUCTION SUPPORT SERVICES ORGANISATIONS

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Many organisations pursue innovation as a means of improving business performance and achieving competitive advantage in today's highly competitive business environment. A number of factors have been identified as influencing innovation in project-based construction organisations. Key among them are; organisational culture, team climate for innovation and leadership style. The nature of the relationship among these three important factors has been the subject of debate and conjecture. Whilst a number of studies have claimed relationships among them, the nature and causality is not clearly established. This situation is compounded by the fact that there are no universally accepted definitions of these constructs themselves. This paper reviews relevant literature on innovation, organisational culture, leadership style, team climate and project performance, with a particular focus on the role of key organisational actors with responsibility for developing a climate to facilitate innovation at the divisional or business unit level. The review reveals that efforts to establish a climate for innovation will be influenced by the organisational culture. Interestingly, it was also found that the role of middle managers in promoting innovation is under-researched. This review provides the basis for on-going research which aims to examine the important role of middle management in enabling relevant organisational changes to facilitate innovation within a leading construction support services organisation.

Keywords: construction support services, innovation climate, leadership style, organisational culture, project performance.

INTRODUCTION

The case for more innovative practices in construction is well established (Latham, 1994; Egan, 1998). Within engineering consulting and professional services organisations, this need for change is being driven by the quest for more innovation and flexibility by way of responding to conflicting expectations and demands from clients and a rapidly changing business environment (Koch and Bendixen, 2005). Innovation has become a very important source of competitive advantage for

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businesses, not least in construction organisations, and has attracted the attention of a number of researchers. In a study of 21 construction practitioners, Lim and Ofori (2007) identified profit maximisation as an important driving force behind efforts at innovation by construction firms. However there are also many documented barriers and challenges associated with change initiatives in the construction industry (Nam and Tatum, 1997).

Organisational culture, climate and leadership are known to influence innovation and performance. Whereas a number of studies have investigated the relationship between organisational culture and innovation (Hartmann, 2006), leadership and innovation (Jung, Wu and Chow, 2008) and organisational climate and innovation (Ekvall, 1998), few studies have examined these three constructs simultaneously and how they impact innovation. Sarros, Cooper and Santora (2008) examined the relationship between transformational leadership, organisational culture and organisational innovation in a study of the private sector. The study which involved 1,158 managers found that organisational culture mediates the relationship between transformational leadership style and organisational climate for innovation. In the construction industry, Panuwatwanich, Stewart and Mohamed (2008) studied 181 architectural and engineering design professionals and found that leadership and team climate impacts on organisational culture perceptions which in turn influence innovation diffusion outcomes as well as business performance.

Although these studies have contributed significantly to the understanding of the relationship between these key concepts, they have relied on cross-sectional research design and are therefore limited in their capacity to draw causal inferences. Also the studies focused on the organisational level of analysis and outcomes. Moreover most studies examining leadership style (e.g. Sarros *et al.*, 2008; Jung *et al.*, 2008) have tended to focus on senior managers. Furthermore, the relationship among the three constructs has not been comprehensively examined in the context of construction professional services organisations in the United Kingdom. This research will focus on middle management and will investigate the role of their leadership style and organisational culture in building a climate that support innovation at the project level. This study will contribute to on-going debate about the nature of the relationship among these three key organisational constructs and their impact on innovation and project performance.

KEY CONCEPTS

Innovation

Innovation has become an important source of competitive advantage as it provides an avenue by which organisations can differentiate their products or services (Dulaimi *et al.*, 2005). In the construction industry, innovative solutions are mostly driven by the need to overcome challenges on site during construction or during the design process. Other organisations in the industry pursue innovation as a means of introducing improvement into existing processes, (Dulaimi *et al.*, 2005).

Dodgson, Gann and Salter (2008) essentially defined innovation as "the successful commercial exploitation of new ideas. It includes the scientific, technological, organisational, financial and business activities leading to the commercial introduction of new (or improved) product or service (Dodgson *et al.*, 2008:2). Innovation in the construction industry usually takes place during project execution primarily through

personal exchanges among designers (Salter and Gann, 2003) which makes innovation difficult to plan (Bayer and Gann, 2007).

The concept has also been defined as the development and implementation of new ideas by people who over time engage in transactions with others within an institutional context (Van de Ven, 1986: 604). This view of innovation coupled with the interactive nature of design innovation makes it important for organisations to create an environment that will facilitate this face-to-face communication among designers in order to promote innovation, hence the emphasis on climate for innovation as a measure of the innovation capacity in this study.

Gann and Salter (2000) argued that the ability of project-based design, engineering and construction firms to meet changing demands from clients and improve performance through innovation management is closely linked to the development of technical capabilities. These capabilities such as knowledge are considered to be embodied in the staff of the organisation (Bayer and Gann, 2007). Given the high level of internal divisions in project-based firms (Gann and Salter 2000), it could be argued that each division will have their unique ability to innovate which will be consistent with their internal characteristics.

In a study of Swiss construction firms, Hartmann (2006) suggested that factors that are internal to organisations such as characteristics of members (e.g. education), service offer, knowledge strength and cooperative behaviour influence their innovation performance. The study also identified innovation acceptance of the client as an external variable that has an impact on innovation.

In view of the fact that each division serves a different client and have a different set of internal variables, this study would expect that innovation performance will vary from one division of the firm to another.

Climate

Climate has been defined as a characteristic ethos or atmosphere within an organisation at a given point in time which is reflected in the way the members perceive, experience and react to the organisational context (Rollinson and Broadfield 2002: 597).

Psychological, Team and Organisational Climate
James *et al.* (2008) suggested that human cognition plays an intervening role between environmental stimuli and how people respond to the stimuli. According to the authors, key to these cognitions is the psychology meaning that individuals associate with the environment. Within the work environment, these meanings that employees ascribe to their work environment such as jobs, co-workers, leaders among others is described as psychological climate (James and James, 1989).

Organisational climate on the other hand has been loosely defined as shared psychological meanings and is considered a logical extension of psychological climate. It represents the general meaning drawn from aggregating the perceptions of individuals of the work environment where there is perceptual agreement (James *et al.* 2008). This view of climate suggests that where there is no perceptual agreement among employees, organisational climates would not exist. Commenting on similar propositions made by earlier writers and researchers, Glick (1985) asserted that this is not logical and is a questionable theoretical proposition. Glick further stated that "a construct should exist for the whole population or not exist at all" (Glick 1985: 604-605).

Glick defines organisational climate as "a broad class of organisational, rather than psychological, variables that describe the organisational context for individual's actions" (Glick 1985: 613). The author further highlighted the appropriateness of acknowledging multiple units of theory and analysis in climate studies stating that "at a minimum, individual, subunit and organisational units of theory and analysis should be recognised. Organisational and subunit climates provide the context in which psychological climates may be understood" (Glick 1985: 603). Glick's (1985) view of climates at different levels of analysis gives credence to the concepts of team climates. The aggregation of the psychological climates scores for the individuals averaged at the appropriate level gives an indication of the climate at that level, be it organisational, (Patterson *et al.*, 2005) or the team level (Anderson and West, 1998).

Contrary to James and James' (1989) view that the individual is the sole unit of theory for climate and consistent with Glick (1985), this study takes the view that organisational climate is a property of the organisation and not the individual since its impact extends beyond the individual to the organisation. This study also takes the view that climates can be studied at business units, departmental and team level. The focus of analysis in terms of climate for innovation will therefore be at the project team level.

Climate in organisational studies is important because employees draw conclusions regarding what is important to management from what they observe rather than what is said and take steps to align their own priorities with what they perceive to be important to the organisation. It could therefore be said that these perceptions of priorities serve the purpose of providing direction and orientation for employees in deciding where to channel their energies, abilities and efforts Schneider *et al.* (1994), hence the emphasis on climate for innovation in this study.

Culture, Climate and Innovation

The multiplicity of definitions put forward by various researchers for culture is a testament to the complexity of the subject. For example Ott (1989) reported on a study which identified 164 definitions of culture. Following a review of the culture literature, this study will assume culture as the fundamental values and beliefs held and shared by members of an organisation that provide boundaries for choices, clarifies expectations and provides a platform for collaboration. The question as to whether climate and culture are different ways of studying the same phenomenon (Denison, 1996) or two completely different constructs as depicted by James *et al.* (2008) has continued to plague culture and climate studies. Whereas some cultural researchers have questioned the importance of the climate construct (Ott, 1989), others have acknowledged it importance in organisational studies (Schneider, 2000). Historically, culture research has focused on the evolution of social systems over time whereas climate research is more concerned with what impact such systems have on the individuals and groups in an organisation (Denison 1996).

Schneider (2000) sought to distinguish between the two constructs by referring to the terms people use to describe their organisational settings (e.g. innovative) as climate whilst what happens to them or around them in the work is considered the stimuli that creates the climate. The author further suggested that the stories, myths and other attributes of culture come to light when employees try to explain why they think things happen that way.

Contrary to the views held by many researchers, Denison (1996) in a comprehensive review of the culture and climates literature concluded that "these two research

traditions should be viewed as differences in interpretation rather than differences in phenomenon" (Denison, 1996: 645). This according to him will provide a strong rationale for the continued efforts at integrating qualitative and quantitative approaches to organisational culture and for that matter climate studies.

The competing values framework developed by Quinn and Rohrbaugh (1983) has been a very important tool for assessing the effectiveness of organisations on many dimensions including innovation and flexibility. The model formed the basis for Cameron and Quinn (1999) typology of culture which included; clan, hierarchy, adhocracy and market cultures. According to the authors the adhocracy culture stresses external positioning combined with a high degree of flexibility and presents a dynamic, highly creative and entrepreneurial environment in which individual initiative and risk taking is highly recommended. Visionary leadership combined with innovation and risk taking is most desired. These organisations are held together by a commitment to experimentation and innovation whiles success is measured by the production of unique, innovative products and services.

This study takes the view that culture and climate are different but complementary organisational constructs and that combining them in a single study will yield very useful result of practical value to the organisation under investigation and provide some useful insight for similar organisations in assessing their own culture and climate identifying what needs changing for a more effective performance.

Sarros *et al.* (2008) argued that organisational culture is an important determinant of climate for innovation. The authors found out that a competitive, performance-oriented organisational culture had a positive relation with organisational climate for innovation. In that direction this study expects that adhocracy culture will play a very important role in promoting innovation performance and organisational effectiveness and that effort to develop an innovative climate will be difficult if not impossible in a situation where the culture is unsupportive of innovation.

DEVELOPING A CONCEPTUAL FRAMEWORK

Team Climate and Innovation

Projects in a construction support service organisations are generally organised around teams and that is the basic point where innovation can be initiated, developed and incorporated into the design process (Anderson and West, 1998). Anderson and West (1998) argued that the proximal work group or teams constitutes the appropriate level of analysis for assessing shared perception of climate. Proximal work group in this instance was defined as "either permanent or semi-permanent team to which individuals are assigned, whom they identify with, and who they interact with regularly in order to perform work-related tasks" (Anderson and West, 1998: 236). This definition can be extended to include a project team as individuals who are brought together to collaborate for the purpose of achieving a common purpose (Isaksen and Lauer, 2002), which in this case is delivering a project. The combination of knowledge, skills and abilities of the individuals in the team with different experiences and perspectives serves as a fertile ground and provides the enabling environment that stimulates innovation and creativity through social interaction (Isaksen and Lauer, 2002).

Contrary to Patterson *et al.*'s (2005) view of approaching climate from the global or organisational perspective, this study considers that shared climate is not likely to exist that embraces the whole of a large organisation comprising of several business

units, divisions and departments with their unique characteristics (Anderson and West, 1998). Hence this study will focus on climate for innovation at the project team level and suggests that providing the right climate that supports innovation within a particular division is likely to lead to enhanced performance of project teams.

Leadership Style and Innovation

Researchers have highlighted leadership style as an important individual factor exerting significant influence on innovation in organisations either directly or through other intervening variables such as culture and climate (Ekvall, 1998; Nam and Tatum, 1997). Transformational leadership is linked to change of culture and motivation of people to achieve organisational goals and has been found to be more closely associated with employee satisfaction and organisational productivity (Jung *et al.*, 2008).

Following a review of the leadership for innovation literature, Panuwatwanich, *et al.* (2008) identified six characteristics of leadership for innovation. These included creating and communicating vision, promoting new ideas, encouraging members, mentoring, engaging and consulting. These characteristics align very well with the four components of transformational leadership of idealised influence, inspirational motivation, intellectual motivation and individualised consideration identified by Bass and Avolio (1994). Bass and Avolio (1994) submitted that through intellectual stimulation, transformational leaders question assumptions and by so doing stimulate their followers' efforts to be innovative, creative and approach old situations in new ways. Through idealised influence, the leader earns credit with the followers by placing their needs ahead of their own, shares risks with them and avoids public criticisms of individuals who make mistakes. This engenders a greater willingness on the part of the followers to take risks and adopt more innovative approaches to delivering projects.

Studies on leadership have primarily focused on top management with little attention paid to middle management and less so in the construction industry. In a study of 13 construction site managers, Styhre and Josephson (2006) drew a comparison between site managers in the construction industry and middle managers in conventional companies. The study which focused on how the site managers experienced their work situation revealed they generally had a positive experience of their work situation. Although the sample size is small and therefore the findings cannot be generalised, it highlights a departure from many other negative reporting on middle managers. The study also revealed the gap in the literature on middle management in the construction industry as most of the scanty literature on middle management has been based on conventional organisations whiles studies on site managers have seldom referenced the general management literature.

Notwithstanding the conflicting views on middle management, they play an important and central role in ensuring organisational and project objectives are achieved, Styhre and Josephson (2006). Hence the leadership style exhibited by middle managers is likely to influence the organisational climate and the innovative behaviour of project managers and that will in turn influence project outcomes and organisational performance.

Leadership, Culture and Climate for Innovation

The relationship among leadership style, organisational culture and climate for innovation has received some attention in recent times. Sarros *et al.* (2008) found that

the transformational leadership dimension of vision was strongly associated with climate for organisational innovation mediated by the organisational culture. Panuwatwanich *et al.* (2008) on the other hand proposed that leadership for innovation, and team climate for innovation influence perceptions of organisational culture for innovation which in turn impacts on innovation.

This study considers that transformational leadership of middle management aimed at creating a team climate for innovation will be interpreted in the light of the prevailing culture. Overtime, this is likely to result in a shared meaning of what employees perceive to be management's view on innovation. This climate will in turn influence employees' actions and promote innovative approaches to delivering projects. Hence culture will mediate the relationship between transformational leadership and team climate for innovation. The leadership style of middle managers could also act directly on the team climate for innovation and facilitate innovative approaches as depicted in figure 1 below.

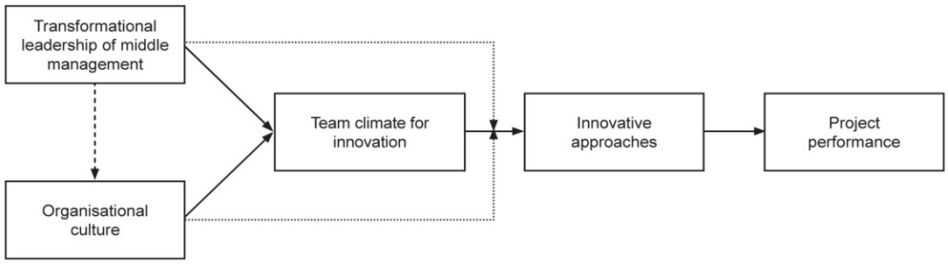

Figure 1: Conceptual Framework

Project and Business Performance Outcomes of Innovation

Innovation has been found to be linked to project performance (Dulaimi, 2005) and business outcomes (Panuwatwanich *et al.*, 2008). This relationship has not been empirically confirmed for a construction support services and design organisation in the United Kingdom. In line with the observation that different stakeholders have different expectation of project and that project success have different meaning to each of them, Shenhar and Levy's (1997) multi-dimensional approach to measuring project performance will be adopted in this study. The project outcomes to be measured will extend beyond the traditional financial measures (Salter and Torbett, 2003) and will include both subjective and objective measures such as client satisfaction, staff satisfaction, profitability and project delivery to budget and programme. Performance outcomes of innovative climate will be assessed both at the project and divisional level in this study. In taking this approach, it is recognised that particular projects may not always be a good representation of overall performance of the division or business unit (Gann and Salter, 2000).

METHODOLOGICAL IMPLICATIONS

Traditionally, studies involving culture and climate have employed qualitative and quantitative methodologies respectively (Denison, 1996). Schneider (2000) submitted however that in spite of the fact that the two constructs emerged from different traditions of organisational research, they provide sufficient grounds for a complementary understanding of these similar psychological phenomenon. He further calls for the combination of the strengths associated with the study of both constructs in order to compensate for their weaknesses. This view was further buttressed by

Schein (2000) who suggested that effort to change climates without an understanding of the basic assumptions underling that climates will prove futile.

To that effect this study will seek to combine the strategic focus of climate studies which in this case is climate for innovation and the study of deep psychological attributes such as values, beliefs and meanings associated with culture in line with Schneider's (2000) recommendation for a complete study of the organisation concerned. This study will therefore explore the culture of the organisation under study in order to identify the underlying assumptions that can support or hinder the development of climate for innovation.

This research also proposes to use longitudinal multiple case study employing both qualitative and quantitative methods. Semi-structured interviews will be held with divisional managers (middle managers), project managers and project team members at set intervals in order to capture how leadership and culture interact in the process of time to create team climate for innovation. The investigation will also examine the causal linkages among the constructs overtime. Project documents will be reviewed to verify issues highlighted in the interview and confirm project outcomes. The proposed model will be revised on the basis of the findings.

Subsequent to the interviews, quantitative data will also be obtained. This will be used to test the revised model. The readiness of the employees to accept more innovative approaches to delivering projects will be investigated using the Organisational Culture Assessment Instrument to establish the current culture and the preferred culture (Cameron and Quinn, 1999). The leadership style of divisional managers will be assessed from the point of view of the staff in the division using the four dimensions of transformational leadership, (Bass and Avolio, 1994). Team climate for innovation will also be assessed using the Team Climate Inventory, (Anderson and West, 1998).

CONCLUSIONS

Whereas much research has been undertaken on climate for innovation and how it relates to the organisational concepts of culture and leadership style, little is understood of the nature of this relationship and how they interact to impact directly on innovation and indirectly on performance in construction professional services organisations. This review reveals that culture and leadership play a very important role in change initiatives generally and in this instance the process of developing a climate for innovation.

Evidence from the literature reviewed suggests that change initiatives in the construction industry are hindered by a number of challenges. Efforts to create an innovative climate will be influenced largely by the culture within the organisation.

Most of the studies reviewed employed cross-sectional case study approach and therefore fail to track the process of developing an innovative climate and how it ultimately impacts on performance. Moreover the leadership aspect of the study rather focused on top managers. Given the important role that middle managers play in either promoting or resisting change, it is interesting that very few studies have focused on them. This study will therefore address this gap and contribute to a better understanding of how middle managers can influence the teams under them to create a more innovative climate and how this impact on project performance.

From the foregoing, it could be concluded that this study will be relevant in addressing such research questions as;

- what is the relationship between transformational leadership style of middle managers and team climate for innovation?
- does culture moderate this relationship?
- how does climate for innovation impact on project and business performance

These questions will be addressed as part of an on-going investigation on how the leadership style of project managers interact with and shape the culture of a construction professional services to create climate for innovation.

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