

An exploratory study to identify critical factors of innovation culture in organizations

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ABSTRACT

During the past two decades, there has been a growing trend on knowledge-based organizations. Innovation, on the other hand, plays essential role on building competitive business units. In this paper, we present an exploratory study to identify critical factors of innovation culture in organizations. We detect important factors influencing innovation culture in construction industry based on the implementation of factor analysis. The proposed study designs a questionnaire and distributes it among 400 experts who are involved in construction industry. Cronbach alpha has been calculated as 0.779, which validates the overall questionnaire. The results of factor analysis have indicated that six factors of building cultural infrastructures, education, organizational vision, established culture, strategic culture and flexible culture are the most important items influencing innovation culture.

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1. Introduction

During the past two decades, building knowledge based organizations has become popular among many investors and as a result, many people have spent substantial amount of their time concentrating on the impacts of different items influencing on creation of such organizations. Hartmann (2006), for instance, investigated the role of organizational culture in motivating innovative behavior in construction firms. He discussed that motivation was the main force through which individuals allocate effort to generate and implement innovative ideas. However, employees are entitled to become motivated and go beyond their designated role and get involved in spontaneous and innovative activities if they are given a strong identification with the organization. Steele and Murray (2004) discussed how to create, support and sustain a culture of innovation within organization. They tried to raise awareness of the key factors associated with innovation, diffusion and the associated management of change. They also discussed the advantages afforded by developing an organizational culture of innovation. Urabe (1988) discussed innovation and the Japanese management system.

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According to Walwyn (2007), Finland is a good benchmark for having a successful business plan based on innovation on the mobile phone industry. According to Webster (1988), the marketing concept has assisted many US firms gain substantial positions in the world's economy. Bhuian (1998), for example, investigated the applicability of Kohli and Jaworski (1990) and Jaworski and Kohli's (1993) market orientation technique in Saudi Arabia, a developing country market by investigating a sample of 115 Saudi Arabian manufacturing business units. The properties of the scales pertaining to the constructs in the market orientation technique was re-examined in Saudi Arabia. Further, the market orientation model was also studied both by the traditional methods as were used by Jaworski and Kohli (1993) and by a structural equations model in LISREL.

Buhalis (2000) explained that marketing of destinations should balance the strategic aims of all stakeholders as well the sustainability of domestic resources. Destinations have to differentiate their products and they have to develop partnerships between the public and private sector locally to coordinate delivery. Taking advantage of new technologies and the internet also assists destinations enhance their competitiveness through increasing their visibility, reducing expenditure and enhancing local co-operation (Roy & Wield, 1986). In other investigation, Houston (1986) examined the marketing concept in a way that more clearly showed what it was and what it was not.

According to Narver and Slater (1990) firm performance is normally impacted by market orientation, yet to date there has been no precise technique of a market orientation and hence no systematic analysis of its effect on a business's performance. Narver and Slater (1990) reported the development of a valid measure of market orientation, investigated its effect on a business's profitability and reported a positive effect of a market orientation on the profitability of both kinds of businesses. Kohli et al. (1993) described market orientation as the organization-wide generation of market intelligence pertaining to current and future needs of customers, dissemination of intelligence horizontally and vertically within the firm, and firm-wide action or responsiveness to market intelligence.

Slater and Narver (1994) studied how competitive environment impacted the strength of the market orientation-performance relationship and whether it influenced the concentration of the external emphasis within a market orientation-that is, a bigger emphasis on customer analysis relative to competitor analysis, or vice versa, within a given magnitude of market orientation. Hooley et al. (2000) performed an investigation and stated that relationship between market orientation and both marketing strategy and performance broadly followed forecasts from the Western literature indicating that the adoption of a market orientation was equally applicable in transition as in Western economies. Harris (2001) investigated the links between market orientation and objectively measured financial performance. The study reported a narrower range of environmental conditions where market orientation was associated with performance, positively. Wu (2004) studied the impact of strategy and market orientation on the performance of the travel industry in a Taiwanese travel industry's electronic commerce. They explained that the marketing departments still possess influenced, and that strategy and market orientation influenced performance through "customization" and "marketing influence". Harris (2002) stated that management techniques for developing market orientation differ along five various dimensions, with each organization tending to stress one of these emphases. Homburg and Pflesser (2000) stated that a market-oriented culture could impact financial performance indirectly through market performance and that this relationship could be stronger in highly dynamic markets. Au and Tse (1995) investigated the impact of marketing orientation on firm Performance in on Hotel industry in Hong Kong and New Zealand. Greenley and Matcham (1986) investigated the marketing orientation of the firms who supply the UK's service of incoming tourism. Qu and Ennew (2003) studied the consequences of market orientation in China. Diamantopoulos and Hart (1993) looked for the relationship between market orientation (Porter, 1990) and company performance.

As we can observe from the results of Table 1, all skewness statistics are within acceptable limits and there is no need to remove any question from the survey. Therefore, we perform factor analysis where six factors are extracted in Table 2 as follows.

Table 2
The summary of factor analysis

Factor	Measured variable	Weight	Eigenvalue	Variance	Accumulated
Building cultural Infrastructures	Group thinking	.686	2.783	11.131	11.131
	Capacity building for development	.654			
	Allocation of research departments and individual creativity	.606			
	Encourage to create innovation	.568			
	Informed of changes	.550			
Cronbach alpha = 0.693	Innovation as an organizational principle	.452			
Education	Applying new technology	0.765	2.773	11.092	22.222
	Freedom in using new technology	0.659			
	Consistency with solutions	0.638			
	The use of indigenous innovation	0.512			
	Cronbach alpha = 0.691	Efficiency improvement			
Organizational vision	Contribute to innovation as staff duties	0.781	2.613	10.453	32.675
Cronbach alpha = 0.748	Applying leading technologies and processes	0.773			
	Align employee and organizational goals	0.748			
	Informing technological advances to customers	0.622			
	Progress in line with customer needs	0.487			
Established culture	Applying staff's creative ideas	0.703	2.436	9.743	42.418
	Tracking group decisions made	0.655			
	Cronbach alpha = 0.658	Benefits associated with research and development executives			
	Process improvement	0.516			
Strategic culture	Continues of creative thinking	0.639	1.883	7.532	49.950
	Review on organizational plans	0.586			
	Cronbach alpha = 0.562	Fast decision making			
Flexible culture	Horizontal organizational growth	0.633	1.292	5.168	55.119
Cronbach alpha = 0.246	Creating spirit of innovation	0.334			

In addition, Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) has been calculated as 0.813, which validates the overall survey and Chi-Square value is also equal to 2310.750, which validates the overall survey.

3. Discussion and conclusion

Many knowledge-based organizations depend strongly on their human resource management to introduce new ideas in industry. In this paper, we have presented an exploratory study to identify critical factors of innovation culture in organizations. We have detected important factors influencing innovation culture in construction industry based on the implementation of factor analysis. The results of factor analysis have indicated that six factors of building cultural infrastructures, education, organizational vision, established culture, strategic culture and flexible culture are the most important items influencing innovation culture.

The first factor, building cultural infrastructure, consists of six factors. The most important item within this item is group thinking followed by capacity building for development, allocation of research departments and individual creativity, encouraging staff to create innovation, informed of changes and innovation as an organizational principle. The second factor, education, consists of five factors including applying new technology, freedom in using new technology, consistency with solutions, the use of indigenous innovation and efficiency improvement.

The third factor, organization vision, consists of five factors including applying new technology, freedom in using new technology, consistency with solutions, the use of indigenous innovation and efficiency improvement in terms of their relative importance. The third factor, organizational vision,

consists of five factors including contribute to innovation as staff duties, applying leading technologies and processes, align employee and organizational goals, informing technological advances to customers and progress in line with customer needs.

The fourth factor, Established culture, includes four factors: Applying staff's creative ideas, tracking group decisions made, benefits associated with research and development executives and process improvement. Strategic culture is another important item, which includes continues of creative thinking, review on organizational plans and fast decision making. Finally, flexible culture is the last item with two items of horizontal organizational growth and creating spirit of innovation.

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