

Investigating the effects of organizational culture on individual's innovation

Amirnima Negahdari* and Abdolreza Sobhani

Department of Management, South Tehran Branch, Islamic Azad University, Tehran, Iran

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ABSTRACT

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This paper presents an empirical investigation to study the effects of organizational culture on individual's innovation. The study designs a questionnaire consists of 30 questions in Likert scale, which has 4 main categories and 16 sub-categories. The main hypothesis of the survey investigates whether or there is a positive relationship between organizational culture and individual's innovation. Using Spearman correlation ratio as well as stepwise regression technique, the study has confirmed a positive and meaningful relationship between organizational culture and individual's innovation. In addition, there are positive and meaningful relationship between individual's innovation and knowledge sharing, top management support, supporting mechanism and management's accepting criticism.

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1. Introduction

Innovation is a new idea and can be viewed as the application of better solutions, which meet new requirements or existing market requirements and it is accomplished through effective services, technologies, or ideas available to markets, governments and society (Afuah, 2003; Boan & Funderburk, 2003). Most firms are getting increasingly diverse in terms of gender, race, ethnicity, and nationality (Brown et al., 2011; Schein, 1990). This diversity creates some advantages such as better decision making, bigger creativity and innovation, and better marketing to various kinds of customers. However, increased cultural differences within a workforce may also cost in higher turnover, interpersonal conflict, and communication breakdowns (Cox Jr, 1991). Daft (1978) investigated the role of administrators and technical employees in the process leading to innovation adoption. He reported that two distinct innovation processes, bottom-up and top-down, could exist in firms.

*Corresponding author. Tel: +989121433044
E-mail addresses: amirnegahdari@yahoo.com (A. Negahdari)

Dobni (2008) recommended that an innovation culture scale could best be represented through a structure, which could include seven factors detected as innovation propensity, organizational constituency, organizational learning, creativity and empowerment, market orientation, value orientation, and implementation context.

Gillespie et al. (2008) examined the relationship between organizational culture and customer satisfaction based on business-unit data from two firms. The first study examined 32 regional markets of a residential home-building firm and the second one examined 148 automobile dealerships. They reported that, the culture measures related substantially to customer satisfaction, explaining 28% of the variance for the home-building markets and 11 – 28% of the variance for the auto dealerships.

Gordon (1991) developed an argument that organizational or corporate culture was strongly influenced by the characteristics of the industry in which the firm operates. Thus, firms within an industry share certain cultural elements required for survival. The study detected three classes of industry variables that have the potential for creating industry-driven cultural elements including competitive environment, customer requirements, and societal expectations.

Janssen (2000) and Krause (2004) reported a positive relationship between job demands and innovative work behavior when workers perceived effort-reward fairness rather than under-reward unfairness. O'Casey and Ngo (2007) gave some insights into how market orientation and organizational culture together contribute to brand performance, shedding light on the nexus between innovative culture and market orientation, and investigating the importance of innovative culture on market orientation in influencing brand performance.

Nguyen and Shanks (2009) constructed a theoretical framework for learning more about creativity in requirements engineering. The study provided a systematic means of having insight about creativity in requirements engineering and comprises five elements. The study provided some basis for exploring how the five elements of creativity could be incorporated within RE methods and techniques to support creative requirements engineering.

Valencia et al. (2010) studied the relationships between organizational culture and product innovation. They reported that organizational culture could be considered as one of the primary elements in both enhancing and inhibiting innovation. The findings provided evidence about this proposition. In their study “While ad hoc cultures could enhance the development of new products or services, hierarchical cultures inhibit product innovation”.

Zampetakis et al. (2010) investigated the relationship between time management behaviors and attitudes with measures of creativity, as evaluated by self-rated creativity and a measure of creative personality. In addition, total creativity was examined, as the sum of the two creativity constructs when z-scored. They reported that creativity was positively associated with daily planning behavior, confidence on long-range planning, perceived control of time and tenacity and negatively associated with preference for disorganization.

2. The proposed study

This paper presents an empirical investigation to study the effects of organizational culture on individual's innovation. The main hypothesis of the survey is as follows,

Main hypothesis: There is a positive relationship between organizational culture and individual's innovation (II).

To examine the main hypothesis of the survey, the study considers the following four sub-hypotheses,

1. There is a positive relationship between knowledge sharing and individual's innovation.
2. There is a positive relationship between top management support and individual's innovation.
3. There is a positive relationship between supporting mechanisms and individual's innovation.
4. There is a positive relationship between management's accepting criticism and individual's innovation.

The study designs a questionnaire consists of 30 questions in Likert scale, which has 4 main categories and 16 sub-categories as follows,

1. Knowledge sharing: Management's support (MS) on knowledge sharing, trust among employees for sharing knowledge (T2E), trust between employees and managers for knowledge sharing (TBEM), using advances in information technology for knowledge sharing (IT), paying special attention to knowledge sharing in firm's mission (MISSION), planning for knowledge sharing (PLN),
2. Top management support (TMS): Financial support for knowledge sharing programs, Top management's interest in knowledge sharing among employees, top management's confidence on innovative employees' needs,
3. Supporting mechanisms for innovative employees: Rewarding employees financially (R), existence of suitable conditions for innovation (C), successful employee participation in decision making (SP), employees' more freedom in doing things (F),
4. Management's accepting criticism: Management's welcome on the challenges and changes, creating good environment for employees to express their views.

The study has accomplished among 152 randomly selected employees who worked for one of Iranian paint companies in Iran. Fig. 1 demonstrates personal characteristics of the participants. Cronbach alphas have been measured for all components of the survey and they were all well above the minimum acceptable level. In addition, Kolmogorov–Smirnov test has indicated that all components of the survey were normally distributed. Therefore, we use parametric tests to examine the hypotheses of the survey.

3. The results

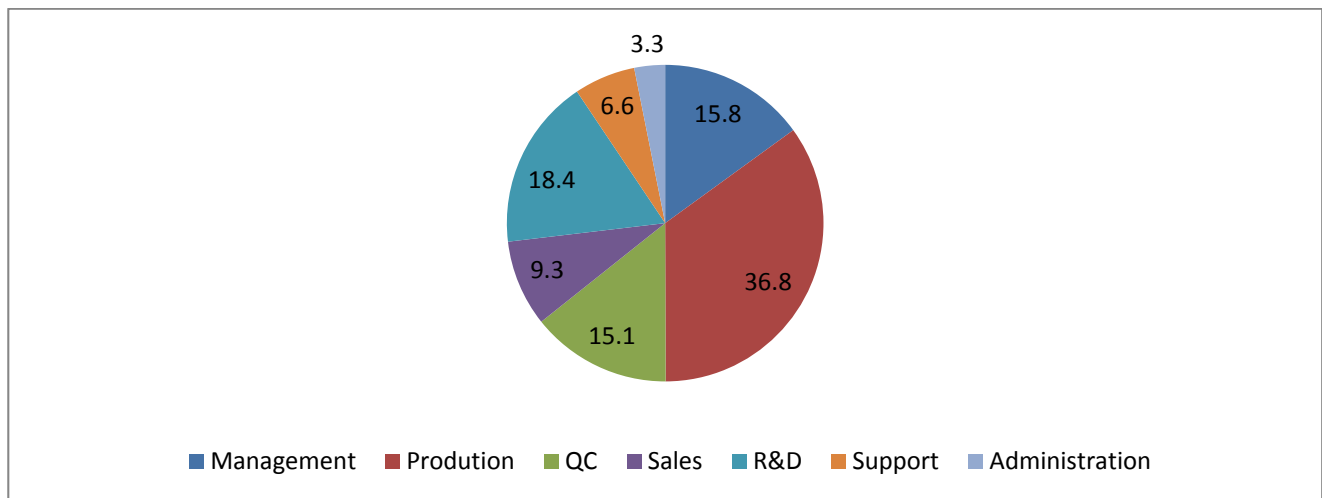
In this section, we present details of our findings on testing various hypotheses of the survey. We first examine the relationship between the main components of the survey. Table 1 shows details of our findings. As we can see from the results of Table 1, there are strong and positive correlations among various components of top management's support. The highest correlation is between supporting mechanisms and knowledge sharing ($r = 0.981$, Sig. = 0.000) followed by management's accepting criticism and knowledge sharing ($r = 0.9781$, Sig. = 0.000). Therefore, the main hypothesis of the survey has been confirmed. In addition, the implementation of Spearman correlation between organizational culture and individual's innovation yields $r = 0.905$ with Sig. = 0.000, which means there is a positive and meaningful relationship between these two components.

Table 1

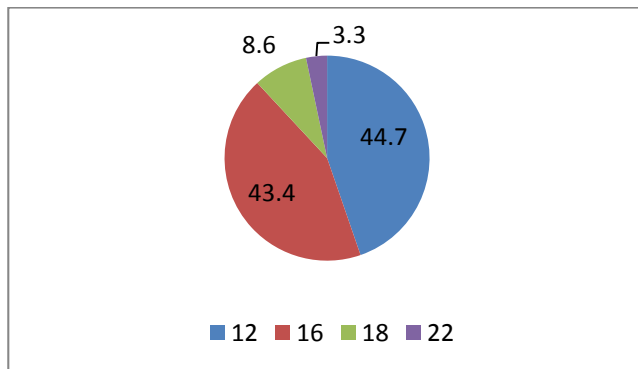
The summary of Spearman correlation for testing the relationships among the main components of the survey

		II	KS	TMS	SM	MAC
II	r	1				
	Sig.	-				
Knowledge sharing (KS)	r	.877**	1			
	Sig.	0.000	.			
Top management support (TMS)	r	.845**	.900**	1		
	Sig.	0.000	0.000	.		
Supporting mechanisms (SM)	r	.899**	.981**	.919**	1	
	Sig.	0.000	0.000	0.000	.	
Management's accepting criticism (MAC)	r	.905**	.978**	.911**	.981**	1
	Sig.	0.000	0.000	0.000	0.000	.

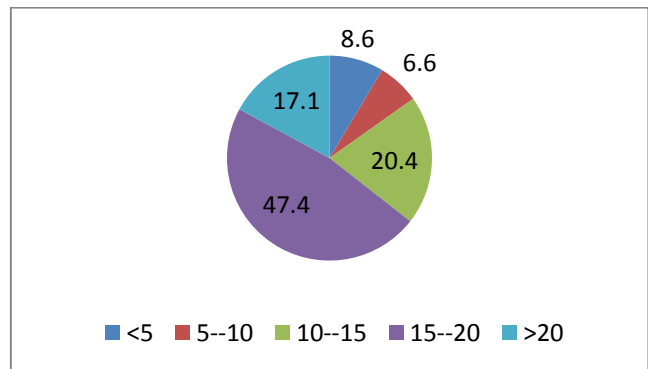
**P<0.01



The frequency of employees' participation from different departments



Years of education



Years of job experiences

Fig. 1. Personal characteristics of the participants

3.1. The relationship between knowledge sharing and individual's innovation

The first hypothesis of the survey is associated with the relationship between knowledge sharing and individual's innovation. Table 2 demonstrates the results of Spearman correlation test. As we can observe from the results of Table 2, there are strong and positive correlations among different components of knowledge sharing. The highest correlation is between management's support and individual's innovation ($r = 0.951$, $Sig. = 0.000$) followed by the relationship between information

technology and management's support ($r = 0.934$, $\text{Sig.} = 0.000$). Therefore, the first sub-hypothesis of the survey has been confirmed.

Table 2

The summary of Spearman correlation for testing the first sub-hypothesis of the survey

		MS	T2E	TBEM	IT	MISSION	PLN	II
MS	r	1						
	Sig.	-						
T2E	r	.817**	1					
	Sig.	0.000	.					
TBEM	r	.561**	.673**	1				
	Sig.	0.000	0.000	.				
IT	r	.934**	.738**	.596**	1			
	Sig.	0.000	0.000	0.000	.			
MISSION	r	.788**	.665**	.503**	.788**	1		
	Sig.	0.000	0.000	0.000	0.000	.		
PLN	r	.845**	.896**	.643**	.757**	.724**	1	
	Sig.	0.000	0.000	0.000	0.000	0.000	.	
II	r	.951**	.795**	.574**	.925**	.893**	.850**	1
	Sig.	0.000	0.000	0.000	0.000	0.000	0.000	.

**P<0.01

3.2. The relationship between top management support and individual's innovation

The second hypothesis of the survey is associated with the relationship between top management support and individual's innovation. Table 3 presents the results of Spearman correlation test.

Table 3

The summary of Spearman correlation for testing the second sub-hypothesis of the survey

		II	Financial support	Top management's interest	Top management's confidence
II	r	1			
	Sig.	-			
Financial Support	r	.756**	1		
	Sig.	0.000	.		
Top management's interest	r	.556**	.723**	1	
	Sig.	0.000	0.000	.	
Top management's confidence	r	.843**	.890**	.668**	1
	Sig.	0.000	0.000	0.000	.

**P<0.01

As we can see from the results of Table 3, there are strong and positive correlations among various components of top management's support. The highest correlation is between top management's confidence and financial support ($r = 0.890$, $\text{Sig.} = 0.000$) followed by the relationship between top management's confidence and individual's innovation ($r = 0.843$, $\text{Sig.} = 0.000$). Therefore, the second sub-hypothesis of the survey has been confirmed.

3.3. The relationship between supporting mechanisms and individual's innovation

The third hypothesis of the survey is associated with the relationship between supporting mechanisms and individual's innovation. Table 4 demonstrates the results of Spearman correlation test. As we can observe from the results of Table 4, there are strong and positive correlations among different components of supporting mechanisms for innovative employees. The highest correlation is between successful employee participation in decision making and rewarding policy ($r = 0.912$, $\text{Sig.} = 0.000$) followed by the relationship between employees' more freedom in doing things and individual's innovation ($r = 0.912$, $\text{Sig.} = 0.000$). Therefore, the third sub-hypothesis of the survey has been confirmed.

Table 4

The summary of Spearman correlation for testing the third sub-hypothesis of the survey

		II	Reward	Conditions	participation	Freedom
II	r	1				
	Sig.	-				
Reward	r	.827**	1			
	Sig.	0.000	.			
Conditions	r	.759**	.893**	1		
	Sig.	0.000	0.000	.		
Participation	r	.864**	.912**	.789**	1	
	Sig.	0.000	0.000	0.000	.	
Freedom	r	.898**	.912**	.846**	.905**	1
	Sig.	0.000	0.000	0.000	0.000	.

**P<0.01

3.4. The relationship between management's accepting criticism and individual's innovation

The fourth hypothesis of the survey is associated with the relationship between management's accepting criticism and individual's innovation. Table 5 presents the results of Spearman correlation test.

Table 5

The summary of Spearman correlation for testing the fourth sub-hypothesis of the survey

		II	Management's welcome on the challenges	Creating good environment
II	r	1		
	Sig.	-		
Management's welcome on the challenges	r	.866**	1	
	Sig.	0.000	.	
Creating good environment	r	.897**	.913**	1
	Sig.	0.000	0.000	.

**P<0.01

As we can see from the results of Table 5, there are strong and positive correlations among various components of management's accepting criticism. The highest correlation is between creating good environment and management's welcome on the challenges ($r = 0.913$, Sig. = 0.000) followed by the relationship between creating good environment and individual's innovation ($r = 0.897$, Sig. = 0.000). Therefore, the fourth sub-hypothesis of the survey has been confirmed. We have also performed stepwise regression analysis between individual's innovation and other components of the survey and Table 6 demonstrates the summary of our findings.

Table 6

The summary of stepwise regression analysis

Variable	β	Standard error	Standard β	t-value	Sig.
Intercept	0.266	0.156		1.709	0.09
Knowledge sharing	0.357	0.128	0.315	2.78	0.006
Top management support	0.508	0.075	0.648	6.761	0.000
Supporting mechanism	0.146	0.024	0.17	6.083	0.000
Management's accepting criticism	0.089	0.021	0.095	4.237	0.001

According to the results of Table 6, all four components are statistically meaningful when the level of significance is one percent. In addition, there are positive and meaningful relationship between individual's innovation and knowledge sharing, top management support, supporting mechanism and management's accepting criticism.

4. Conclusion

In this paper, we have presented an empirical investigation to study the effects of various factors on individual's innovation. The study has accomplished among some employees who worked for different departments in one of Iranian paint making company. The results have indicated that there were positive and meaningful relationships between individual's innovation and different issues such as knowledge sharing, top management support, supporting mechanism and management's accepting criticism. In our study, there were strong and positive correlations among various components of top management's support. The highest correlation is between supporting mechanisms and knowledge sharing ($r = 0.981$, Sig. = 0.000) followed by management's accepting criticism and knowledge sharing ($r = 0.9781$, Sig. = 0.000). In addition, there were strong and positive correlations among various components of top management's support. The highest correlation was between top management's confidence and financial support ($r = 0.890$, Sig. = 0.000) followed by the relationship between top management's confidence and individual's innovation ($r = 0.843$, Sig. = 0.000). Moreover, there were strong and positive correlations among different components of supporting mechanisms for innovative employees. The highest correlation was between successful employee participation in decision making and rewarding policy ($r = 0.912$, Sig. = 0.000) followed by the relationship between employees' more freedom in doing things and individual's innovation ($r = 0.912$, Sig. = 0.000).

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References

- Afuah, A. (2003). Innovation management: strategies, implementation and profits.
- Boan, D., & Funderburk, F. (2003). Healthcare quality improvement and organizational culture. *Delmarva Foundation: A Link to Better Health*, 44, 345-376.
- Brown, D. R., & Harvey, D. F. (2011). *An experiential approach to organization development*. Prentice Hall.
- Cox Jr, T. (1991). The multicultural organization. *The Executive*, 5(2), 34-47.
- Daft, R. L. (1978). A dual-core model of organizational innovation. *Academy of Management Journal*, 21(2), 193-210.
- Dobni, C. B. (2008). Measuring innovation culture in organizations: The development of a generalized innovation culture construct using exploratory factor analysis. *European Journal of Innovation Management*, 11(4), 539-559.
- Gillespie, M. A., Denison, D. R., Haaland, S., Smerek, R., & Neale, W. S. (2008). Linking organizational culture and customer satisfaction: Results from two companies in different industries. *European Journal of Work and Organizational Psychology*, 17(1), 112-132.
- Gordon, G. G. (1991). Industry determinants of organizational culture. *Academy of Management Review*, 16(2), 396-415.
- Janssen, O. (2000). Job demands, perceptions of effort-reward fairness and innovative work behaviour. *Journal of Occupational and organizational psychology*, 73(3), 287-302.
- Krause, D. E. (2004). Influence-based leadership as a determinant of the inclination to innovate and of innovation-related behaviors: An empirical investigation. *The Leadership Quarterly*, 15(1), 79-102.
- O'Cass, A., & Ngo, L. V. (2007). Market orientation versus innovative culture: two routes to superior brand performance. *European Journal of Marketing*, 41(7/8), 868-887.
- Nguyen, L., & Shanks, G. (2009). A framework for understanding creativity in requirements engineering. *Information and software technology*, 51(3), 655-662.

- Schein, E. H. (1990). *Organizational culture*. *American Psychological Association*, 45(2), 109.
- Valencia, J. C. N., Valle, R. S., & Jiménez, D. J. (2010). Organizational culture as determinant of product innovation. *European Journal of Innovation Management*, 13(4), 466-480.
- Zampetakis, L. A., Bouranta, N., & Moustakis, V. S. (2010). On the relationship between individual creativity and time management. *Thinking Skills and Creativity*, 5(1), 23-32.