Impact Of Informal Communication On Corporate Creative Performance

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ABSTRACT

Creativity is crucial to the performance of R&D teams. Since the creative work, the team needs to connect and integrate the opinions of multiple employees the team's relation is a crucial determinant of creative performance. The purpose of this study is to identify the effects of informal communication on organizational creativity. In this study, informal communication is divided into mentoring or coaching system and learning organization. An empirical analysis of this study found that team creativity requires informal communication. In addition, research has shown that positive effect of mentoring or coaching on creative performance was clearer when firm size was large. Finally, mentoring or coaching has a positive impact on creative performance as the employee ability is higher. The results of this study provide implications for strategies to enhance organizational creativity by demonstrating that informal communication has a significant relationship with organizational creativity.

Keywords: Informal Communication; Creative Performance; Mentoring or Coaching; Learning Organization

1. INTRODUCTION

New product development shows the organization's creative potential. Every organization is under pressure to provide new services or products on a regular basis, regardles of size or industry (Leenders, Engelen & Kratzer 2003). Creativity is important for new product development. Recent attempts to analyze the maintained superior creative performance of corporate-like APPLE, and PIXAR have focused on these firms' organizational cultures. These tendencies suggest that firms with continued superior creative performance generally are distinguished by an intensive core business value that typically defines strategic business practices. It is these core values about organization culture that advance flexibility and innovativeness in firms; when they are connected to innovative ideas, they are thought to lead to maintained excellent creative performance. Nowadays, knowledge of existing products frequently insufficient to meet the new requirement necessary to gain a competitive advantage for new products, requiring superior creativity of R&D team.

Many of these clarifications have strong descriptive theories. Corporations with flexible cultures are indicated as examples of superior management for altering the cultures of other corporations to approximate carefully the cultures of successful corporates have been widely debated and applied (Agars, Kaufman, Deane & Smith, 2012; Amabile, 1998; Nayak & Agarwal, 2011; Nonaka, 1994). These attempts are not only seen as ways to improve the morale of employees or work life but are also essential to improving the firm's creative performance. In addition, recent work has tended to focus on analyzing an employee's interaction and cultures in its organization (Agars et al., 2012; Kram, 1985; Levinson, Darrow, Klein, Levinson & McKee, 1978; Nayak & Agarwal, 2011; Roche, 1979).

This paper examines the relationship between informal communication as a flexible organizational culture and creative performance. The analysis of the concept of creative performance is measured by the number of patent applications. While some corporations may gain maintained superior creative performance from their informal communication, corporations without such cultures cannot anticipate getting innovative ideas. Thus, the descriptive associations of research on flexible organizational cultures are limited to reporting how firms conducting informal communication can create their creative performance.

First, the key concepts such as mentoring, and learning organization used in this analysis are defined. Second, the characteristic that a firm's culture has in order to be a source of creative performance are discussed. Finally, whether or not this conception of creative performance is affected by informal communication is analyzed.

2. PRIOR STUDIES

2.1 The Concept and Function of Informal Communication

Some concepts in communication have two different definitions. Sighand and Bell (1986), for example, has categorized formal and informal communication into these categories when reviewing the literature on organizational communication. In this paper, organizational communication generally is defined as structural aspects that define the way in which a corporation conducts its organization. In this sense, communication type has pervasive effects on a corporate because a firm's culture not only generates person-to-person relationship but it also how an employee will communication with a colleague (Garvey, Lin & Nelson, 1971; Kraut, Fish, Root & Chalfonte, 1990; Wolek & Griffith, 1974). This conception of informal communication is distinct from formal communication (Crawford, 1971). In organizational communication, the informal communication of firms is divided into two categories: mentoring or coaching and learning organization.

2.1.1 The Concept and Function of Mentoring and Coaching System

Typically, mentoring has been defined as an exchange of interpersonal relationship between experienced senior associate (mentor) and a less experienced junior associate (mentee) in which the mentor provides knowledge, wisdom, experience concerning job career and personal development (Kram, 1985; Noe, Greenberger & Wang, 2002; Ragins, 1999; Wanberg Welsh & Hezlett, 2003). In addition, Bozeman and Feeney(2007) defined mentoring as a method for the informal transfer of work-related insight, social competence and psychical support. Kram (1983) confirmed two main functions of mentor's roles: job career and psychical functions. Mentors may provide different types of support for two functions(Dreher & Ash, 1990). Job career function helps to promote and improve the career advancement of the mentee. The psychosocial function serves to improve the mentee's sense of ability, identity, and work-role influence (Kram, 1985). By forming a sense of trust and intimacy, personal advice can provide a sense of stability in social life. Psychosocial mentoring can help individuals improve their ability and efficiency, and it reduces job-related stress (Greiman, 2007). Researchers have revealed the positive effects of the mentoring system on job achievement (Kram, 1985; Levinson et al., 1978; Roche, 1979).

Coaching system is similar to the mentoring system. Coaching means that high-level managers provide coaching for the development of their employee's competencies (Sheppard, Canning, Anderson, Tuchinsky & Campbel, 2006). Coaching can be one-on-one or with a group, but mainly refers to a 1:1 helping activity.

2.1.2 The Concept and Function of the Learning Organization

The concept of the learning organization has become increasingly extensive in modern firms, from the largest firms to the smallest ventures because high-level learning courses have been presaged as a source of competitive advantage (Ellinger, Ellinger, Yang & Howton, 2002; Senge, 2008). The learning organization is a concept that is repeatedly redefined over the years (Wronka, 2015). Mumford and Sillins (2001) defined learning organizations as a way for organizational members to continuously learn from each other's experiences as well as from the environment. Argyris and Schön (1978) defined organizational learning as a process of the identification and correction of the fault. Senge (1990) defined the learning organization is steadily expanding its capacity to develop new ways of thinking and creates the results where members are continued to see the whole together. The learning organization constantly creates, acquires, and transmit knowledge to respond to rapidly changing environments (Giesecke & McNeil, 2004). There are many definitions of concept learning organization based on researchers' attempts to define the general feature of the learning organization. Most definition focus on integrating and changing organizational and its member's behavior as a result of knowledge sharing, personal and group learning facilitation, and learning outcomes (Appelbaum & Reichart, 1998; Leitch, Harrison, Burgoyne & Blantern, 1996). Thus, learning organization can improve its organizational performance through its knowledge management activities (Hong & Kuo, 1999; Loermans, 2002). The definitions of researchers for the learning organization are shown in Table 1 below.

Table 1. Some definitions of the facilitating organizational learning

Researcher	Definitions
Pedler, Burgoyne & Bordell (1991)	A Learning Company is an organization that facilitates the learning of all its members and continuously transforms itself
Malhotra (1996)	The learning organization is an organization with an ingrained philosophy for anticipating, reacting and responding to change, complexity and uncertainty
Garvin (2000)	A learning organization is an organization skilled at creating acquiring, interpreting, transferring, and retaining knowledge, and at purposely modifying its behavior to reflect new knowledge and insights
Senge (1990)	Organizations where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured where collective aspiration is set free, and where people are continually learning to see the whole together

Senge, P. (2008). The "Learning organization" approach as a challenge for business development. Institutional learning and personal professional development, 4(2), 141-155.

2.2 Relationship Between Informal Communication and Creative Performance

Researchers suggested a positive correlation between informal communication practices and firms' financial performance (Davis & Daley, 2008; Ellinger et al., 2002). Unfortunately, much research has not been conducted on the impact of informal communication concepts on creative performance. In recent years, regardless of size or industry, firms have been devoting themselves to developing new products and services that have never existed before in order to acquire a competitive advantage. Creativity is an integral part of a firm's creative performance in the development of new products. Guilford (1967) defined creative actions in terms of idea production. Similarly, Tyler (1978) argued that creativity included awareness of the possibilities. Almost all research of creativity, scholars use standard measures drawn from several categories. One of them consists of apparent criteria, such as patent counts. These measures evaluate generate innovative products (Cole, 1979; Lehman, 1966; Terman,1954).

According to Leenders et al. (2003) knowledge is the core key to enterprise's new product development. As a result of new knowledge can only be generated through interactions of experts in various fields, innovation is performed in the process of data processing (DeMeyer, 1985; Moenaert, Caeldries, Lievens & Wauters, 2000). Therefore, intercommunication is a very important part of the research of the new product development. Along similar lines, the productivity of R&D teams depends heavily upon the ability of members to utilize the network (DeMeyer, 1991; Kratzer, 2001). An interest generally found in creativity research is the composition of environments able to facilitate innovative performance. In this regard, organizational systems that support the autonomy of members can increase the likelihood of achieving innovation (Mumford & Gustafson, 1988). Product development requires a combination of new knowledge and existing ideas. It is necessary to coordinate and combine the opinions of the team members, and new knowledge is created through effective communication and information exchange among team members. Ultimately, it is up to the interaction among team members to materialize the idea from interaction (Csikszentmihalyi, 1999). Leenders et al. (2003) found that as communication converged to team leaders, organizational creativity was not positively affected. That is, the lower the centralization of communication, the more positive is the creativity of the members. Thus, an organizational culture that restricts the autonomy of individuals and lacks communication among members hinders firms' innovation (Pelz, 1956). On the other hand, organizations that have a culture where members communicate actively and encourage individual autonomy and knowledge creation have achieved creative performance. Although organizational culture is not the only factor determining creativity, many studies show that active communication, environmental support, and trust among members have a high correlation with creative performance (Ellison, James, & Carron, 1970; Talyor & Barron 1963). Therefore, the mentoring or coaching system and learning organization, which can freely exchangeable ideas and provide psychological stability to create new knowledge, will positively affect organizational creativity. Thus, we hypothesize the following:

H1: Informal communication (Mentoring or coaching and learning organization) has a positive effect on the corporate creative performance.

The greater the firm size is, the greater the positive effect of informal communication on organizational creativity. Most large size firms have a vertical structure rather than a horizontal structure. The size of the firm is proportional to the number of employees, and the firm with a large number of employees has a top-down order system to promote efficient work. The SME (Small and Medium-Sized Enterprise) has a relatively straightforward position structure, horizontal and flexible work structure. When horizontal informal communications in a large corporation with a rigid culture, the impact on organizations will be greater than for SME. As a result of the strict system and precise division of labor, employees can feel a sense of psychological security through mentoring or learning organization, and who can think creatively with more flexible thinking through interactions among employees. On the other hand, if the corporate culture is horizontal and flexible, the effect of informal communication may not be significant. Thus, the larger the firm size, the greater the positive impact of the mentoring or coaching and learning organization on creative performance.

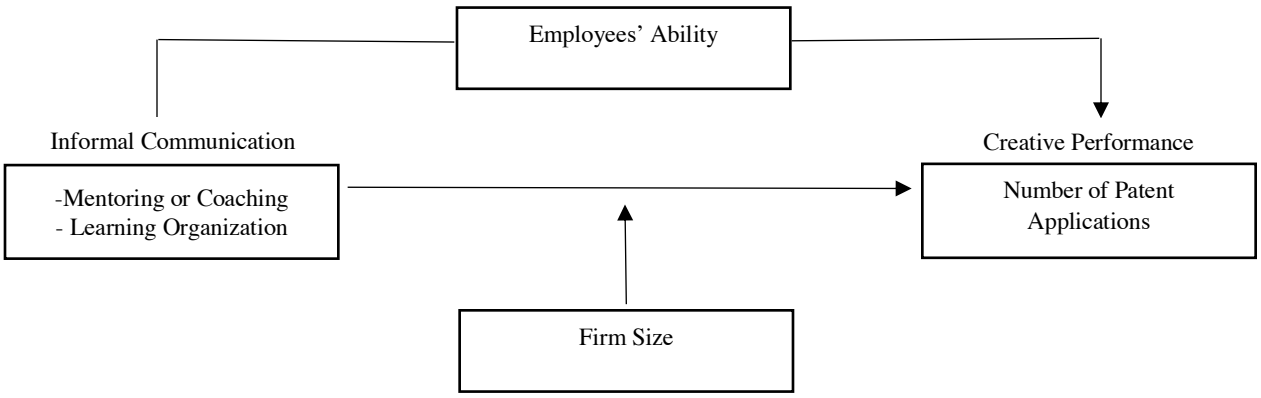
H2: Firm size positively moderates the relationship between informal communication(mentoring or coaching and learning organization) corporate creative performance.

2.3 The Role of Employees' Ability in Informal Communication and Creative Performance Relationships

The impact of informal communication on creativity performance will depend on the abilities of the employees. In this study, the ability of an employee refers to problem-solving, self-development, and resource utilization. First, the ability of problem-solving refers to the ability to properly solve problems through creative and logical thinking when problems arise. And self-development ability refers to self-management and development of the ability to carry out tasks. Finally, resource utilization ability refers to the ability to appropriately utilize resources such as time, budget, and human resources, that are necessary for carrying out the work. According to Senge (2008), learning organization creates more knowledgeable employees by facilitating information exchange among employees. Also, the mentoring or coaching system is an effective tool in developing the abilities of employees (Aryee, Chay & Chew, 1996; Edwards, 2003). Thus, the higher the ability of the employees, the easier it will be to implement the idea as a creative product and the more likely it will be to succeed. Therefore, informal communication will have a positive impact on creative performance as the employee ability is higher.

H3: Employees' ability mediates the relationship between informal communication(mentoring or coaching and learning organization) and corporate creative performance.

Figure 1. Research model



3. METHODS

3.1 Data

Empirical data were obtained from Human Capital Corporate Panel data (HCCP) conducted in 2009 and 2015 by Korea Research Institute for Vocational Education & Training (KRIVET). This survey universe consisted of

corporations listed in KIS Firm Data 2005 published by the Korea Information Service. A total of 473 firms in the manufacturing sector participated in the survey, and I used data from 301 firms that had R&D units. This study focused on firms with R&D units in the manufacturing sector where organizational creativity was relevant. Table 2 provides descriptive statistics for the constructs.

Table 2. Statistics

	N	MIN	MAX	AVE	SD
Number of patent applications	301	0	1589	32.91	143.54
Mentoring or coaching	301	0	1	.40	.49
Learning organization	301	0	1	.30	.45
Employees' ability	301	1.33	5	2.95	.60
Firm size	301	0	1	.53	.50
Foreign ownership	301	0	1	.39	.48
Corporate governance	301	0	1	.30	.46
Strategic alliance	301	0	1	.22	.41

3.2 Variables

Dependent variable. The creative performance, which is a dependent variable of this study was the number of patent applications. Creativity is a new and unique idea as well as the first creation of knowledge (Amabile, 1998).

Independent variable. The independent variable of this study, the mentoring or coaching, and learning organization were measured by a dummy variable depending on whether they were officially operated by the firm or not.

Mediating variable. In this study, the mediating variable was measured employees' ability as the average of problem-solving skills, self-development skills, and resource utilization skills. Cronbach alpha was .797.

Control variable. Firm size, foreign ownership, corporate governance, strategic alliance variables were used to affect the firm's patent applications. If the employees of the firm are 300 or more, it is regarded as an SME it is coded as "1" if any and "0" if not. According to prior studies, foreign investment has a significant effect on firm performance and value (Khanna & Palepu, 1999). Therefore, it is coded as "1" if it is foreign ownership. Corporate governance is divided into owner management and professional management. In the past, owner management was the most common, but the CEO's management system has been introduced as a strategy to cope with the rapidly changing environment. For example, Apple and Pixar, the world's leading companies, have demonstrated high levels of collective creativity through their CEO management strategies. Therefore, it is coded as "0" if it is the entire owner management system and the owner's involvement was considerably large. And it is coded as "1" if it is a complete professional management system and owner's involvement was a little. Finally, a strategic alliance can have a positive impact on the corporate creative performance as a new management strategy to maintain mutual cooperation among firms. Therefore, if a strategic alliance is established, it is coded as "1", if any and "0" if not. Table 3 displays the definition of all variables and Table 4 displays correlations for the study variables.

Table 3. Variables

Dependent var	Creative performance	Number of patent applications by 2015
Independent var	Training system	Mentoring or coaching
		Learning organization
Mediating var	Employees' ability	Problem-solving skills
		Self-development skills
		Resource utilization skills
Control var	Firm size	Number of employees over
	Foreign ownership	Foreign ownership
	Corporate governance	Owner management/CEO management
	Strategic alliance	Strategic alliance

Table 4. Correlations

	1.	2.	3.	4.	5.	6.	7.	8.
1. Number of patent applications	1	-	-	-	-	-	-	-
2. Mentoring or coaching	.169**	1	-	-	-	-	-	-
3. Learning organization	.142*	.343**	1	-	-	-	-	-
4. Employees' ability	.143*	.194**	.026	1	-	-	-	-
5. Firm size	.186**	.093	.143*	.110+	1	-	-	-
6. Foreign ownership	.196**	.069	.040	.014	.203**	1	-	-
7. Corporate governance	.185**	.085	.076	.102+	.208**	.168**	1	-
8. Strategic alliance	.164**	.103+	.104+	.018	.15*	.127*	.100	1

+p<.1, *p<.05, **p<.01

3.3 Results

Table 5 present the main regression results. The baseline model (M0) contains control variables.

M1 shows that the effect of mentoring or coaching on the number of patent applications is positive and significant (β=.129, p<.05). Also, M2 shows that the effect of the learning organization on the number of patent applications is positive (β=.101, p<.1); thus Hypothesis 1 is supported. Further, mentoring or coaching has a positive effect on the moderate effect of firm size (β=.186, p<.1), thereby partially supporting Hypothesis 2.

Table 5. Regression result for H1 and H2

	M0	M1	M2	M3	M4	M5
Constant	-22.071+ (13.171)	-33.771* (14.017)	-28.529* (13.605)	-20.538 (15.546)	-20.770 (14.594)	-20.144 (16.187)
Firm size	34.188* (16.575)	31.824+ (16.485)	30.554+ (16.636)	7.902 (20.564)	16.477 (19.230)	2.360 (21.478)
Foreign ownership	39.616* (16.830)	38.270* (16.717)	39.703* (16.767)	35.045* (16.724)	38.873* (16.745)	35.431* (16.743)
Corporate governance	39.302* (17.862)	37.021* (17.759)	37.997* (17.810)	37.840* (17.683)	36.870* (17.793)	36.654* (17.727)
Strategic alliance	41.699* (19.360)	37.926+ (19.288)	38.719* (19.358)	35.885+ (19.228)	37.396+ (19.344)	34.414+ (19.282)
Mentoring or coaching	-	37.679* (16.274)	-	3.036 (24.177)	-	3.256 (24.939)
Learning organization	-	-	31.524+ (17.539)	-	.596 (27.579)	-.402 (28.270)
Mentoring or coaching X firm size	-	-	-	62.934+ (32.606)	-	51.124 (34.416)
Learning organization X firm size	-	-	-	-	51.788 (35.684)	30.741 (37.416)
N	301	301	301	301	301	301
F	7.482**	7.146**	6.677**	6.631**	5.936**	5.157**
R^2	.080	.093	.086	.101	.090	.100

+p<.1, *p<.05, **p<.01

As shown in Table 6 and Table 7, I used two tests to investigate the mediation effect of employees' ability between the mentoring or coaching, learning organization and number of patent applications. First, I conducted Baron and Kenny's three-step analysis (Baron & Kenny, 1986). The analysis of Hypothesis 3, in the first step, I found that mentoring or coaching was positively and significantly associated with the number of patent applications (β=.129, p<.05). In the second step, the mediator (employees' ability) was positively and significantly associated with mentoring (β=.183, p<.01). In the third step, the results showed that the mediator (employees' ability) had a significant effect on the dependent variable (number of patent applications), even after controlling for the effect of mentoring (β=.111, p<.05). These results indicate a partial mediation effect of employees' relational coordination competencies

between mentoring or coaching with the number of patent applications. It was found that the learning organization has a positive and significant relationship with the number of patent applications (β=.129, p<.1). But the second step, the mediator (employees' ability) was not significantly associated with facilitating organizational learning. Therefore, the Hypothesis 3 was partially supported.

Table 6. Result for H3

	Step path	B(SE)	β	t	R^2
1	Mentoring -> number of patent applications	37.679 (16.274)	.129	2.315*	.093
2	Mentoring -> employees' ability	.227 (.071)	.183	3.201**	.036
3	Mentoring -> number of patent applications	22.369 (13.346)	.094	1.676+	.098
	Employees' ability ->number of patent applications	32.611 (16.503)	.111	1.976*	

+p<.1, *p<.05, **p<.01

Table 7. Result for H4

	Step path	B(SE)	β	t	R^2
1	Learning organization → number of patent applications	31.524 (17.539)	.101	1.797+	.086
2	Learning organization → employees' ability	.008 (.077)	.006	.110	.003
3	Learning organization → number of patent applications	27.050 (13.135)	.114	2.059*	.096
	Employees' ability →number of patent applications	31.294 (17.443)	.100	1.794+	

+p<.1, *p<.05, **p<.01

In addition, I conducted Hayes & Preacher (2014) bootstrapping analysis to confirm the mediating effect. The number of resampling for bootstrapping is 5,000 and I used BC method (bias-corrected confidence intervals) considering the bias of the data. In the 95% confidence interval, the mediating effect coefficient upper level was 17.596, and the lower level was 8.136. Therefore, it is statistically significant because it does not include 0 between the upper level and the lower level.

4. CONCLUSION

This study analyzed the relationship between the concept of informal communication (mentoring and learning organization) and objective measures of a corporate creative performance. Using two-wave panel data from 301 manufacturing firms in South Korea, the results showed that informal communication (mentoring and learning organization) positively influenced creative performance measured by the number of patent applications, and only the mentoring system was partially mediated by employees' ability. The positive effect of mentoring or coaching on creative performance was clearer when firm size was large. This study adds value to the informal communication literature by revealing the importance of an organizational culture that emphasizes communication among employees in achieving creative performance.

First, mentoring or coaching has a positive effect on creative performance as the firm size is larger, but the learning organization does not have a differential effect according to firm size. Because the learning organization communicates with many people, it has not been able to exert its distinctive strength in large corporations that have many employees and lack personal communication. Second, mentoring or coaching has a positive effect on creative performance as the employee ability was higher, but there is no discriminative effect of learning organization on employee ability. The mentoring or coaching system guides the mentees or coached with the necessary knowledge and skills based on their mentor or coach experience and set them as a role model or framework. Therefore, the effectiveness of the mentoring or coaching system can vary depending on the mentor or coach, mentee or coached's

capabilities. However, the ability of the individual was not so important because the learning organization was a collective intelligence where the employee gathered and cooperated.

This study has several implications in subsequent studies. First, in order for the value of the informal communication presented in this study to be realized, research must be performed that analysis the relationships between level of participation in mentoring or learning organizations and creative performance. This study could only report on the relationship between mentoring or learning organization existence and creative performance. However, multiple factors will influence a creative outcome. The effect of informal communication on the creative performance can be understood by taking into account the influence of many other factors. In addition, there may be other components that can moderate the actual effect of the informal communication on creative performance. For example, effects with young employee or duration of participation may be stronger. Also, the study has shown that it takes years for the firm to show its creative performance. Therefore, this study suggests future research on the duration of the firm creative performance and the longevity of these effects.

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