

*Full Length Research Paper*

# Mediating role of knowledge sharing: Organizational performance for competitive advantage and innovation

Hira Waheed\*, Tahir Masood Qureshi, M. Aslam Khan and Syed Tahir Hijazi

University of Central Punjab, Lahore, Punjab, Pakistan.

Accepted 15 May, 2012

**In this study, we examined the mediating impact of knowledge sharing on the relationship of information technology, organizational culture, teamwork, trust, employee motivation to disseminate their knowledge, and organizational performance. Data from 270 employees of telecommunication sector of Pakistan indicated that information technology, organizational culture, teamwork, trust, employee motivation to disseminate their knowledge, were positively related to the organizational performance. Moreover, the mediating relationship of knowledge sharing has been proved. Limitations and future directions are discussed at the end.**

**Key words:** Knowledge sharing, organizational performance, competitive advantage, innovation, intellectual capital, teamwork, organizations' culture, motivation, information technology, trust.

## INTRODUCTION

In the developing pace of these days, it is becoming vital for every organization to have competitive advantage by bringing innovation in the products and services they offer for sale. As, the globalization is increasing (Mujahid, 2002), it is becoming more and more complex for organizations to increase their profitability and market share. To overcome this crucial issue of profitability and market share organizations are employing multiple resources, but now organizations has realized that other organizations in the industry have almost same resources and managerial expertise as they have (Harisson and Samaon, 2002). Especially in telecom sector of Pakistan where competition is increasing day by day.

To face the competition, all the telecom firms are equipped with almost same type of facilities (Marceau and Sawaka, 1999). To improve their condition in the market they have started focusing on bringing innovation in the products and services they offer for sale, because innovation is the most important source for competitive advantage.

To achieve the goal of improved performance with innovation organizations are employing different resources but the most important resource an organization can

ever have is their employees and their knowledge (Cohen and Levinthal, 1990) because in an organization every person has valuable knowledge that plays a very important role in improving organization's overall condition.

The importance of knowledge of the employees has gain importance a few decades back but Drucker has highlighted in his findings in 1965 as cited in Liao et al. (2010) that equipment, capital, materials and labor will be replaced by the knowledge of workers of the organizations in all sort of businesses, later in 1993 he again mentioned in his research work that the innovation and competitive advantage of the firms will depend upon the knowledge of its employees rather than the other physical resources they acquire.

The employees of any organizations are the most important assets of it and the knowledge in the minds of these employees plays an important role in improving an organizations' overall condition (Choy et al., 2006). By combining the knowledge of employees and using it in an efficient way, organization can achieve their goals of competitive advantage. That is the main reason organizations are emphasizing more and more on knowledge sharing, as Ju et al. (2006) has shown in the findings that to improve the process of innovation organizations should enhance the process of knowledge assimilation.

Knowledge has an impact on organizations'

\*Corresponding author. E-mail: [hirawaheed.8@gmail.com](mailto:hirawaheed.8@gmail.com).

performance, with the advancement organizations are using new techniques to increase knowledge sharing among the employees of the organization (Gupta, 2003). Organization culture, teamwork, trusts among employees, information technology and employee motivation to disseminate their knowledge are four pillars, which promotes and maintain knowledge sharing in an organization and ultimately result in increased organizational performance (Gupta and Dasgupta, 2009).

Lin et al. (2009) while studying the factors facilitating knowledge sharing in Taiwanese shipping industry has identified that the culture of organization, and leadership, information technology and motivation of employees to share their knowledge with other co-workers are the highest scorers to increase knowledge sharing among organization. As well as the finding of Ooi et al. (2010) suggests strong positive relationship between the teamwork and knowledge sharing among the employees.

Thus, organizations' performance and its competitive advantage depend upon knowledge sharing, information technology, teamwork, organizational culture, trust, and employee motivation to share their knowledge.

The aim of this study is to: (1) resolves the main problem of competitive advantage and innovation of the organization and ensures their existence. (2) Highlight the importance of knowledge sharing in the organizations by using different techniques. (3) Highlight the advantages of technological investment, organizational culture, trust among employees, employee motivation, and teamwork in the organization.

## LITERATURE REVIEW

Organizations' complete emphasize is always on increasing its performance and for this organizations are trying to develop knowledge sharing culture in the organization. To fulfill this purpose, organizations should pay attention to the development of human resource of the organization because with the development of human resource of the organization, it will become easier for the organization to develop the knowledge sharing culture in the organization because knowledge is the most valuable resource of the organization (Kongpichayanond, 2009).

According to Han and Anantamula (2007) for successful knowledge sharing, it is necessary for organization to apply result oriented and employee motivating strategies. Organizations should adopt knowledge practices in a way that it becomes a part of their business strategies, because all their competitive advantage depends upon the knowledge of their workers (Kalseth and Cummings, 2001).

As Anantamula and Kanungo (2010) has shown that organizations should implement suitable knowledge sharing practices. Although information technology plays a very important role in the success of the organization but the trust among the employees is mandatory (Liao,

2003).

## Information technology

Information technology has gained much importance in various organizational practices. Information technology plays a very important role in enhancing the performance of the organization (Melville et al., 2004). Information technology plays a significant role in increasing organizational performance (Lee and Hong, 2002) and gaining competitive advantage (Kearns and Lederer, 2003).

It provides strong support in many areas of business as well as it play an important role in facilitating the knowledge sharing among the employees of the organization (Lin, 2007). With the development of information technology organizations have employed multiple knowledge sharing resources which increases their knowledge sharing capabilities as compare to those organizations did not do so (Kasper et al., 2009).

Information technology provides an easy access to endless knowledge as well as encourages knowledge sharing among all the levels of the organization (Hall, 2001). Organizations can use information of employees to improve their performance (Hendriks, 1999). As well as it can use other means of information technologies to enhance knowledge sharing and keeping it in a way that other employees can also get benefit from it (Bernus and Kalpic, 2006).

## Organizational culture

Culture is a set of norms, values, and procedures that plays a very important role in shaping the behavior of individual in the organization (Bose, 2004; Lu et al., 2008). The culture of the organization plays a very important role in developing the way in which employees interact with one another (Al-Alawi et al., 2007). The culture of the organization is an important means of determining the success of the organization (Wilikins and William, 1983). Culture plays an important role in determining the preferences of the employees (O' Reilly et al., 1991). Organizational culture is the most important variable in enhancing the performance of the employees at desired level (Marcoulides and Ronald, 1993).

The culture of the organization plays a very important role in building knowledge sharing environment. The culture of the organization provides a strong support for building knowledge sharing among the employees of the organization (Lin, 2007). The overall study of Ooi et al. (2010) has shown a significant impact of culture of organization on knowledge sharing among the employees of the organization by identifying the value of Knowledge and creating effective knowledge sharing practices in the organization (Al-Hawamdeh and Luen, 2001).

Organizational culture defines the way in which employees interact with one another (Mei et al., 2004) thus the knowledge sharing among employees largely depends upon the culture in which they are working (Neches et al., 2010). Thus, organizational practices play a very important role in increasing knowledge sharing behavior among employees (Foss et al., 2010).

### Teamwork

People who work in teams share all their experiences with one another, which increase the likelihood of effective goal accomplishment (McNeil, 2003; Rezugui, 2007). Teamwork, communities of practice, and group working encourages the employees collaboration in resolving the problems faced by the organizations (Wenger et al., 2003).

Team performance plays an important role in determining the performance of the organization. As explored by Forrester and Drexler (1999) the team based working organizations should ensure that the teams are working in accordance of the goals assign to them, fulfilling their responsibilities and they are achieving their individual and team based goals by employing the available resources to them.

Team plays an important role in improving interaction among employees and developing strong knowledge sharing environment. One of the dilemmas of failure of knowledge sharing that organization face can be resolved by developing teamwork in the organization (Cabrera and Cabrera, 2002).

Srivastava et al. (2006) has found out that through knowledge sharing in an effective way performance of the team improved and when the performance of the teams improves, the overall performance of the organization also improves. The identity among the employees of the organization facilitates the process of knowledge sharing (Willem et al., 2008). Teamwork by all the employees of the organization is an integral part of organization's competitive advantage and for developing valuable knowledge (Matusik and Hill, 1998).

### Trust

Gruenfeld et al. (1996) suggest that trust among employees plays a very important role in order to communicate effectively with other employees, and this effective communication results in increase organizational performance. By building strong bond of trust among the organization can enjoy numerous benefits, the major benefit is of increased employee performance (Dirks and Ferrin, 2001). Trust among employees reduces the organizational cost of managing conflict and increase the overall performance of the organization (Zaheer et al., 1998).

Trust between the coworkers plays a very important role in effective task accomplishment in the organization by effective knowledge sharing (Al-Alawi et al., 2007). For increasing knowledge sharing among employees there are many factors that plays an important role but trust among employees is of vital importance (Ardichivili et al., 2003), because for knowledge sharing interaction is very important and for the interaction among the employees trust is mandatory, without having trust knowledge sharing among employees cannot be develop (Srivastava and Bartol, 2002).

When employees trust one another, they shared their experiences and knowledge with one another, the combination of new learning and past experience will result in effective outcome (Fernie et al., 2003; Ho, 2009; Yang et al., 2009). Trust plays an important role in increasing the knowledge sharing among the employees of the organization, as the trust among employees increases the process of knowledge sharing between employees become smoother. In this way it, also saves the organizations cost for increasing employees communication (Ginman and Widen-Wulff, 2004).

As mentioned by Man and Wulff (2004) that knowledge has made so much performance but still for purpose of achieving efficient knowledge sharing the trust among the employees of the organization is of most importance. Trust is a key element in promoting knowledge sharing (Abrams et al., 2003). Trust among employees, organization can increase knowledge sharing by increasing commitment among employees (McEvily et al., 2000).

### Employee motivation to disseminate

Motivation plays an important role in increasing the willingness to do a particular thing. Motivation increases employees' willingness to achieve their goals, and when all the employees of the organization become goal oriented its performance increases (Husted et al., 2005). Organization can gain competitive advantage by using the capabilities of employees (Quinn et al., 1996).

The findings of Widen-Wulff et al. (2008) show the positive relationship between the employee motivation and knowledge sharing. Successful knowledge sharing network plays an important role in increasing organizational performance and successful knowledge sharing depends upon the trust and motivation between the employees of the organization (Hendriks, 1999).

Organizations are emphasizing more on building motivational work force as the Toyota Company also emphasizing on employee motivation to share their knowledge in the organization in order to build strong knowledge sharing environment (Dyer and Nobeoka, 2000), so knowledge sharing plays an important role in making an organization successful and employee motivation plays more important role in making knowledge

sharing successful.

### Knowledge sharing

Knowledge is fundamental for any organization. Knowledge has a very strong relationship with the success of the business of any organization. Organization can enhance its knowledge-by-knowledge sharing (Nonaka and Takeuchi, 1995). Knowledge sharing is a process of transferring skills and abilities within the employees by sharing them (Lin, 2007). It can also be said as the transfer of knowledge, skills, and abilities. The high performance of Toyota is because of the knowledge sharing of its employees (Dyer and Nobeoka, 2000).

Effective knowledge sharing within the organization plays a very important role in its success and profitability (Jordan and Jones, 1997). By this, organizations' can increase its profitability by increasing its capability to produce innovative goods and services in their particular area of business (Lin, 2007). Organizations can increase their performance by knowledge sharing. It is biggest resource for an organization to increase its performance and gain sustainable competitive advantage (Ndelela and Toit, 2001; Lin, 2007; Wang, 2009).

Knowledge sharing behavior can be promoted at individual level among employees and for long term competitive advantage effective knowledge sharing is a mandatory element of employee behavior (Lin, 2007), which will ultimately results in culture of knowledge sharing where all the employees can share their ideas. The findings of Liao (2003) suggest that technology plays an important role in the success of organizations' knowledge sharing, but personal factors are much more important in effective knowledge sharing.

### Organizations' performance in terms of competitive advantage and innovation

Organizations always try to employee these practices, which help it in increasing its performance as compare to its competitors. Organization always seeks for the best practices for their employees so that they could bring new knowledge through those practices and innovation can be brought as the result (Sherif, 2006). Innovation plays a very important role in increasing the profitability of the organization (Liebowitz, 2001) that is why organizations of all sorts of businesses emphasize on innovation (Apostolou et al., 2008; Hong et al., 2004).

Innovation can be said as the newness in the products and services (Francis and Bessant, 2005). Innovation is very important in order to strong the market position of the organization (Barney, 1991). Betz (1993) and samson (1991) have highlighted the importance of innovation by dividing it into different organizational levels.

The studies of Hooff and Weenan, (2004) shows that

the knowledge sharing plays a very important role in bringing innovation, competitive advantage, and intellectual capital. There may be other factors influencing knowledge sharing among the employees but the overall innovation of an organization depends upon the knowledge sharing among the employees (Liao et al., 2007) in the study of Taiwanese firms.

Knowledge management is a strategy through which organization can gain competitive advantage (Kongpichayanond, 2009) and for efficient outcomes of knowledge management knowledge sharing plays an important role (Yang and Chen, 2007). By using the knowledge of its employees (Kalseth and Cummings, 2001) and managing and sharing the knowledge of the employees in efficient and productive way (Silvi and Cuganesan, 2006) organization can have long lasting advantages as (Marques and Simon, 2006) have also proves the positive relationship of knowledge practices and firm performance. Innovation and competitive advantage largely depends upon the internal conditions of the organization (Galende and Fuente, 2003) and the motivation and knowledge of its employees (Cohen and Levinthal, 1990). An employee with the full package of information plays a very important role in the success of the organization (Han and Anantamula, 2007). Thus, the competitive advantage and innovation of the employees of the organization depends largely upon the knowledge sharing of its employees.

On the basis of the previous literature it can be said that for building strong knowledge sharing environment organization should emphasize on its culture, trust among employees, information technology, employees' motivation, and teamwork, that on the whole results in successful organization.

Based on previous literature review, Figure 1 is drawn. Organizational culture, trust among employees, information technology, employees' motivation, and teamwork plays an important role in making strong knowledge sharing environment in the organization. Knowledge sharing environment plays an important role in increasing organizational performance and resulting in innovation and competitive advantage.

Figure 1 shows the impact of organizational culture, trust among employees, information technology, employees' motivation, and teamwork with knowledge sharing and ultimate impact of knowledge sharing on organizational performance.

Based on Figure 1, the subsequent hypothesis can be formulated to test the relationship of variables:

**H<sub>1a</sub>:** Information technology will have a significant impact on organizational performance.

**H<sub>1b</sub>:** Organization culture will have a significant impact on organizational performance.

**H<sub>1c</sub>:** Teamwork will have a significant impact on organizational performance.

**H<sub>1d</sub>:** Trust among employees has a significant impact on

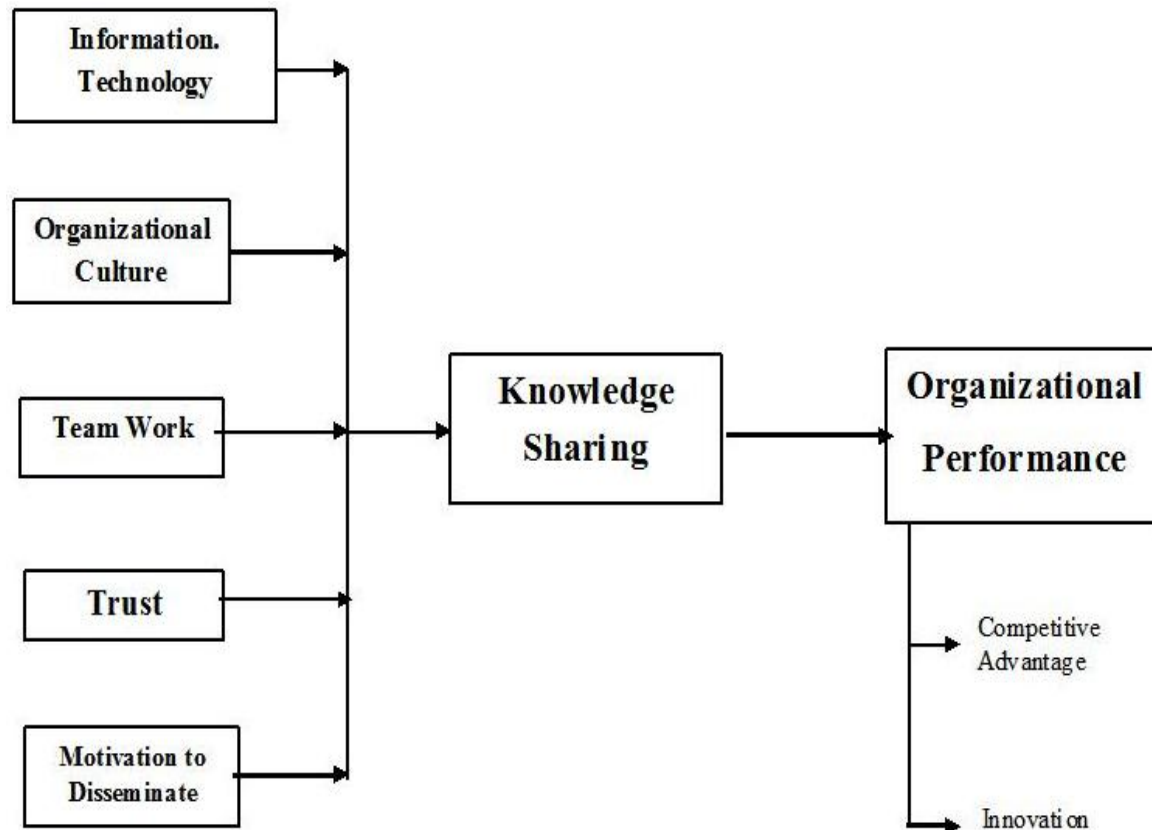


Figure 1. Conceptual framework.

organizational performance.

**H<sub>1e</sub>:** Employee motivation to share their knowledge will have a significant impact on organizational performance.

**H<sub>2a</sub>:** Knowledge sharing will mediate the relationship between the information technology and organizational performance.

**H<sub>2b</sub>:** Knowledge sharing will mediate the relationship between the organizational culture and organizational performance.

**H<sub>2c</sub>:** Knowledge sharing will mediate the relationship between the teamwork and organizational performance.

**H<sub>2d</sub>:** Knowledge sharing will mediate the relationship between the trust and organizational performance.

**H<sub>2e</sub>:** Knowledge sharing will mediate the relationship between employee motivation to disseminate their knowledge and organizational performance.

## METHODS

The study type of previous explained model is applied and co relational. This study focuses on the telecommunication sector of Pakistan, by considering their working culture. Correlation and regression analysis are used to measure the relationship between the variables.

To check the impact of increase in knowledge sharing the telecommunication sector of Pakistan is selected. This sector is

selected because in Pakistan the competition among the telecom companies is increasing day by day.

All telecom companies are included in the sample to check the explained phenomena. Elements of study were employees and managers. The sample data includes the 270 respondents.

## Measures

### Information technology

In order to study the independent variable of form the sample 7 items likert scale was used based on likert style questionnaire (1, "Strongly Disagree", 2, "Disagree", 3, "Somewhat Disagree", 4, "Neutral", 5, "Somewhat Agree", 6, "Agree", 7, "Strongly Agree"). The items included (1) "Development of new technology has facilitated your communication." (2) "Information technology has improved your access to the knowledge." (3) "By the increase use of technology, it is becoming easier for you to complete your tasks." The Cronbach alpha for these five items (0.704) was satisfactory, indicating that together these 5 items can form a reliable measure of this variable.

### Organizational culture

In order to study the independent variable of form the sample 7 items likert scale was used based on likert style questionnaire (1, "Strongly Disagree", 2, "Disagree", 3, "Somewhat Disagree", 4,

**Table 1.** Abbreviations of the variables.

Variables		Abbreviations
Dependant	Organizational performance	OP
Independent	Information technology	IT
	Organizational culture	OC
	Team work	TW
	Trust	T
	Motivational factors	MF
Mediating	Knowledge sharing	KS

“Neutral”, 5, “Somewhat Agree”, 6, “Agree”, 7, “Strongly Agree”). The items included (1)“Your top management structure things in a way that they are accomplished with the cooperation of other employees.” (2)“Your organizational culture brings you employees closer to one another.” (3)“Your organizational culture and atmosphere is supportive and comfortable for sharing knowledge.” The Cronbach alpha for these five items (.758) was satisfactory, indicating that together these five items can form a reliable measure of this variable.

**Teamwork**

In order to study the independent variable of form the sample 7 items likert scale was used based on likert style questionnaire (1, “Strongly Disagree”, 2, “Disagree”, 3, “Somewhat Disagree”, 4, “Neutral”, 5, “Somewhat Agree”, 6, “Agree”, 7, “Strongly Agree”). The items included (1)“ Quality of the results improves when you work in teams.” (2)“ Development of the innovative and productive ideas becomes easier while working as a team.” (3)“ Target achieving has been increased because of increased teamwork.” The Cronbach alpha for these five items (0.711) was satisfactory, indicating that together these 5 items can form a reliable measure of this variable.

**Trust**

In order to study the independent variable of form the sample 7 items likert scale was used based on likert style questionnaire (1, “Strongly Disagree”, 2, “Disagree”, 3, “Somewhat Disagree”, 4, “Neutral”, 5, “Somewhat Agree”, 6, “Agree”, 7, “Strongly Agree”). The items included (1)“ Your employees work in win-win relationship.” (2)“ Your employees like to show that they are cooperative to one another.” (3)“Your employees trust one another and share their ideas.” The Cronbach alpha for these 5 items (0.728) was satisfactory, indicating that together these 5 items can form a reliable measure of this variable.

**Employee motivation to disseminate their knowledge**

In order to study the independent variable of form the sample 7 items likert scale was used based on likert style questionnaire (1, “Strongly Disagree”, 2, “Disagree”, 3, “Somewhat Disagree”, 4, “Neutral”, 5, “Somewhat Agree”, 6, “Agree”, 7, “Strongly Agree”).

The items included (1) “Your employees are excited to share their ideas in group discussions.” (2) “Your employees feel it comfortable in sharing their ideas.” (3) “Your employees are motivated to express their ideas with other employees.” The Cronbach alpha for these 5 items (0.841) was satisfactory, indicating that together these five items can form a reliable measure of this variable.

**Knowledge sharing**

In order to study the independent variable of form the sample 7 items likert scale was used based on likert style questionnaire (1, “Strongly Disagree”, 2, “Disagree”, 3, “Somewhat Disagree”, 4, “Neutral”, 5, “Somewhat Agree”, 6, “Agree”, 7, “Strongly Agree”). The items included (1) “I often share with my colleagues the new working skills that I learn.” (2) “My colleagues often share with me the new working skills that they learn.” (3) “Sharing knowledge with my colleagues is regarded as something normal in my company.” The Cronbach alpha for these five items (0.734) was satisfactory, indicating that together these 5 items can form a reliable measure of this variable.

**Organizational performance**

In order to study the independent variable of form the sample 7 items likert scale was used based on likert style questionnaire (1, “Strongly Disagree”, 2, “Disagree”, 3, “Somewhat Disagree”, 4, “Neutral”, 5, “Somewhat Agree”, 6, “Agree”, 7, “Strongly Agree”). The items included (1) “Our company often develops new products and services well accepted by the market.” (2) “A great majority of our company’s profits are generated by the new products and services developed.” (3) “Our company always develops novel skills for transforming old products into new ones for market.” The Cronbach alpha for these five items (0.735) was satisfactory, indicating that together these five items can form a reliable measure of this variable.

**RESULTS**

The abbreviations of the variables and their full names used in the subsequent tables are shown in Table 1. The results of descriptive statistics and correlation coefficients are presented in the Table 2. Table 2 is presenting

**Table 2.** Mean, standard deviation, and regression.

	Mean	S. D.	OP	KS	IT	OC	TW	T	MF
OP	5.39	1.06	(0.735)						
KS	5.37	1.07	0.943**	(0.734)					
IT	5.40	1.00	0.148*	0.143*	(0.704)				
OC	5.56	1.05	0.554**	0.499**	0.076	(0.758)			
TW	5.17	1.16	0.149*	0.145*	-0.58	0.123*	(0.711)		
T	5.01	1.20	0.293**	0.266**	-0.007	0.196**	0.149*	(0.728)	
MF	5.00	1.35	0.278**	0.241**	-0.007	0.177**	0.158**	0.875**	(0.841)

\*\*\*Correlation is significant at the 0.001 (2-tailed). \*\*Correlation is significant at the 0.01 level (2-tailed). \*Correlation is significant at the 0.05 level (2-tailed). () cronbach alpha, reliability values are given in bold parenthesis. n = 270.

**Table 3.** Multiple regression analysis.

Variable	Model I			Model II		
	$\beta$	R <sup>2</sup>	$\Delta R^2$	$\beta$	R <sup>2</sup>	$\Delta R^2$
<b>Step II: Independent</b>						
Information technology	0.148**	0.022	0.022	0.014	0.890	0.000
Organizational culture	0.554***	0.307	0.307	0.110*	0.899	0.009
Team work	0.149**	0.022	0.022	0.013	0.890	0.000
Trust	0.293***	0.086	0.086	0.046*	0.891	0.002
Motivational factors	0.278***	0.077	0.077	0.054**	0.892	0.003
<b>Step III: Mediating</b>						
Knowledge sharing	--	--	--	0.943***	0.889	0.889

\*p < 0.05, \*\*p < 0.01, \*\*\*p < 0.001, n = 270.

means, standard deviation, and coefficients for variables. Information technology ( $r = 0.148$ ,  $p < .05$ ), organizational culture ( $r = 0.554$ ,  $p < 0.01$ ), teamwork ( $r = 0.149$ ,  $p < 0.05$ ), trust ( $r = 0.293$ ,  $p < 0.01$ ) and employee motivation ( $r = 0.278$ ,  $p < 0.01$ ) were positively, significantly related with organizational performance.

The relationship of all the independent variables including information technology, organizational culture, trust, employee motivation, and teamwork and the mediating variable knowledge sharing were positive and significant. As well as the relationship of the dependant variable organizational performance and mediating variable knowledge, sharing was also significant and positive.

To test hypothesis multiple regression analysis was performed. Multiple regression analysis is used to test hypothesis, using tests proposed by Sobel (1982) and Baron and Kenny (1986) to determine either mediation exists or not. Table 3 reports the regression analysis.

H<sub>1a</sub> shows the relationship of information technology and organizational performance. Our measure of information technology shows that the information technology is significantly ( $r^2 = 0.022$ ,  $p < 0.01$ ) related to the organizational performance. Thus, hypothesis 1 shows that the information technology is positively and significantly related to the organizations' performance.

H<sub>1b</sub> shows the relationship of organizational culture has a significant impact on organizational performance. Our measure of organizational culture shows that the organizational culture is significantly ( $r^2 = 0.307$ ,  $p < 0.001$ ) related to the organizational performance. Thus, hypothesis 1b is positively and significantly related to the organizations' performance.

H<sub>1c</sub> shows the relationship of teamwork on organizational performance. Our measure of teamwork shows that the teamwork is significantly ( $r^2 = 0.022$ ,  $p < 0.01$ ) related to the organizational performance. Thus, hypothesis 1c is positively related to the organizational performance.

H<sub>1d</sub> shows the relationship of trust with organizational performance. Our measure of trust shows that the trust is significantly ( $r^2 = 0.086$ ,  $p < 0.001$ ) related to the organizational performance. Thus, hypothesis 1d, is accepted which means that performance of the employees of the organization largely depends upon the trust among the employees.

H<sub>1e</sub> shows the relationship of employee motivation with organizational performance. Our measure of employee motivation shows that the employee motivation is significantly ( $r^2 = 0.077$ ,  $p < 0.001$ ) related to the organizational performance. Thus, hypothesis 1e, is accepted which means that performance of the employees of

the organization largely depends upon the motivation of the employees.

H<sub>2a</sub> shows the mediating relationship of knowledge sharing with information technology and organizational performance. Our analysis shows that knowledge sharing strongly and fully mediates the relationship of information technology and organizational performance. H<sub>2b</sub> shows the mediating relationship of knowledge sharing with organizational culture and its performance. Our analysis shows that the knowledge sharing does not mediate the relationship of organizational performance and its culture.

H<sub>2c</sub> shows the mediating relationship of knowledge sharing with team work and organizational performance. Our analysis shows that the knowledge sharing fully mediates the relationship of teamwork with the performance of the organization.

H<sub>2d</sub> show the mediating relationship of knowledge sharing with the interpersonal trust of employees and organizational performance. Our analysis shows that the knowledge sharing partially mediates the relationship of trust among employees and organizational performance.

H<sub>2e</sub> shows the mediating relationship of knowledge sharing with motivation of employees to disseminate their knowledge and organizational performance. Our analysis shows that the knowledge sharing partially mediates the relationship of employee motivation and organizational performance.

## DISCUSSION

In the previous-explained model, the relationship of information technology, organizational culture, teamwork, trust, and motivational factors is discussed with the knowledge sharing that result in organization in terms of growth, profitability, and competitive advantage of the organization.

Previously it has been studied by majority scholars that information technology plays a very important role in the increasing need of organizational growth (Brynjolfsson and Lorin, 2000). It is the main reason organizations are paying their primary attention towards the implementation of latest (Raymond et al., 1995) and facilitating computer technology in their organizations (Melville et al., 2004). Now, organizations have started considering information technology as an investment (Mahmood, 1993). The results of our study also support the contribution of information technology in improving the performance of the business and bringing innovation, competitive advantage, and intellectual capital in the business.

Literature has provided a very strong support of the relationship of information technology on knowledge sharing. Information technology is vital for the success of modern business. Many researchers (Lin, 2007; Kasper et al., 2009; Hall, 2001; Hendriks, 1999; Bernus and Kalpic, 2006; Kearns and Lederer, 2003) has shown in their work that Information technology plays a very

important role in facilitating knowledge sharing in the organization, and information technology and organizational performance is positively linked with one another. Information technology provides easy communication to employees for the purpose of knowledge sharing, which ultimately results in improved organizational performance and competitive advantage (Gupta and Dasgupta, 2009). Technology, and knowledge sharing plays a very important role in improving the performance of the organization and bringing innovation (Nieto and Quevedo, 2005). The results of our study also show the strong relationship between the information technology, knowledge sharing, and improved organization performance by bringing innovation in the products and services.

Organizational culture plays a very important role in determining the success or failure of any strategy or technique, by implementing effective strategies organizations can enjoy numerous benefits (Hooff and Weenan, 2004). The success of knowledge sharing also depends upon the support of organizational culture (Connelly and Kelloway, 2003). The work of Lin (2007), Ooi et al. (2010), Al-Hawamdeh and Luen (2001), Neches et al. (2010), Foss et al. (2010) has provided significant support to the relationship of knowledge sharing and organizational performance, as well as role of organizational culture on making knowledge sharing successful and profitable for the organization.

The findings of Gupta and Dasgupta (2009) also suggests that organization's culture, the role of leadership, and information technology are the main factors which maintain organization's distinctive knowledge and bring innovation in the output of the organization. In developing the knowledge, sharing culture contributes effectively (Conner and Prahalad, 1996).

The results of our findings shows that organizational culture does not play a very important role in increasing the knowledge sharing in the organization there are other factors that might be more important in developing the knowledge sharing in the organization, however, in determining the performance of the organization the organizational culture plays a very important role.

In the previous literature many researchers has shown the relationship of teamwork and the improved organizational performance. The work of Cabrera and Cabrera (2002), Srivastava et al. (2006) and Willem et al. (2008) has found out in their studies that teamwork improve interaction among the members of the team, resolves the main dilemma of knowledge sharing failure, and develop identity among the team members.

Teamwork plays a very important role in developing competitive advantage for the organization and generating valuable knowledge (Matusik and Hill, 1998). The results of our study are consistent with the findings of (Ooi et al., 2010) and show the significant relationship of teamwork and organizational performance. Moreover, the results of our study also show the significant relation of



knowledge sharing with teamwork and its impact on organizational performance.

Previous literature has provided the strong support for the trust of employees to share their knowledge with other employees and their management in the organization (Liao et al., 2004). The findings of Liao (2003) suggest that technology plays an important role in the success of organizations' knowledge sharing, but personal factors are much more important in effective knowledge sharing. When employees and management is closer, knowledge sharing flourishes more successfully (Liao et al., 2004).

Many researchers (Ardichivili et al., 2003; Srivastava and Bartol, 2002; Ginman and Widen-Wulff, 2004; Man and Wulff, 2004; Abrams et al., 2003; Mcevily et al., 2000) has shown in their work that trust empowers the knowledge sharing in the organization. Literature provides strong support for trust among workers for successful knowledge sharing implementation in the organization.

As indicated by Widen-Wulff and Ginman (2004) in their work that social attachment is compulsory for effective knowledge sharing. Our findings show the partial mediation in the relationship of trust in building the knowledge sharing in the organization. However, the result of our study are contradictory and suggests that trust to some extent contributes in building strong knowledge sharing among the employees, and results in increased organizational performance.

The previous literature has highlighted the importance of motivation in increasing the willingness of employees. When employees become motivated towards the achievement of their goals, their performance will ultimately increase (Huang et al., 2008). Many researchers (Husted et al., 2005; Widen-Wulff et al., 2008; Hendriks, 1999; Dyer and Nobeoka, 2000) have shown that the employee motivation and employee performance are positively related and this positive relationship has a affirmative impact on knowledge sharing. The study of Yang (2004) also suggests that knowledge sharing largely depends upon the dissemination of knowledge in the organization.

The results of our study show the significant impact of employee motivation and organizational performance. However, the result of knowledge sharing mediation shows the partial mediation, that the organizational performance and employee motivation is to some extent effects by the knowledge sharing.

## MANAGERIAL DISCUSSION

From the management perspective, the previous studied model has significant importance and draw out several managerial implications. Management of telecom sector strives to increase the performance of the organization by bringing new and innovative ideas. Effective knowledge sharing practices provides a strong basis to the management to increase the performance of the organization. Therefore, almost all CEO's and top managers all

over the world are keen in building strong knowledge sharing environment in their organizations to avail the long lasting advantages of knowledge sharing, by developing more innovative and market capturing services for their customers as compare to the competitors. However, knowledge sharing environment largely depends upon the individual characteristics of the employees of the organization as well as on the working environment of the organization.

This study highlights that for successful knowledge sharing in the organization, managers and top executives should form their strategies in a way that knowledge sharing becomes a part of their business strategies. It also includes the culture of the organization in which employees interact with one another. Organizations should develop their culture in a way that it supports and promotes knowledge sharing in the organization. In this way, managers can implement knowledge sharing in their organization more effectively and can gain lasting benefits from it.

This study also highlights the common practices for the organization by which they can implement successful knowledge sharing practices in the organization. These common practices include information technology, trust among employees, and motivation of employees to share their knowledge. The information technology plays a significant role in increasing employees' knowledge sharing practices, as well as it provides the chances to better identify the needs of market by identifying the latest trends of market. Organizations should develop their culture and strategies in way that it increases employee identity and trust. These two factors play a very important role in implementing successful knowledge sharing in the organizations.

This study highlights the needs for teamwork in the organization. With the development, more and more organizations are moving towards the team oriented organizations. Teamwork creates identity among employees which results in trust and employee motivation towards sharing their knowledge. Teams also allow organizations to apply different and more productive knowledge sharing activities in the organization. Team working culture in an organization plays a very important role in increasing knowledge sharing in the organization.

Innovation in previous years has gain significant importance. Especially for the rapidly developing sector of telecommunication, where the competition is very immense. It is necessary for them to bring innovation to ensure their survival and growth. Especially for ensuring the competitive advantage. It all depends upon knowledge sharing in the organization and knowledge sharing depends upon the teamwork, trust, motivation, organizational culture, and information technology.

## Conclusion

Based on previous collected data, it can be concluded

that knowledge sharing plays a very important role in increasing an organizations' performance and developing competitive advantage for that particular organization. Organizations always seek to implement improved and productive strategies. Knowledge sharing is one of those particular strategies. Although knowledge sharing is a very productive activity for any organization and organization can have numerous benefits from it, knowledge sharing faces many barriers. The most important one is of employee unwillingness to disseminate their knowledge.

The other most important factor in making knowledge sharing successful is organization culture. In the previous studies, Al-Hawamdeh and Luen (2001) have shown that organization culture plays a very important role in increasing knowledge sharing activity among the employees. Organizations are more tend to implement effective knowledge sharing in their organizations but the culture in which employees are performing their day-to-day tasks is not in support of this activity. Thus to ensure productive knowledge sharing among the employees organizations should design their culture accordingly.

Teamwork is another important aspect that plays a very important role in creating employee identity and increasing the overall efficiency of task performance. When employees of the organization work as a team they become identical to one another and can carry out a task more efficiently and effectively rather than individual. Teamwork also increases the identity among the employees. When employees work as a group their interaction increases and when the interaction among employees increases the knowledge sharing process is facilitated. Thus, teamwork plays a very important role in making knowledge sharing successful in an organization (Cabrera and Cabrera, 2002).

Trust is a key element in promoting knowledge sharing (Abrams et al., 2003). Without the element of trust among employees, knowledge sharing cannot become successful. When the trust among employees increases they become more relax in sharing their point of view with others. This efficient sharing of knowledge provides a strong basis for developing competitive advantage and bringing innovation in the products and services of the organization.

Information technology has gain importance in almost all the sectors of the business. It also plays a very important role in knowledge sharing. Many researchers have identified information technology as a most supporting tool in knowledge sharing. Advance communication and technology are primary drivers of successful knowledge sharing in an organization.

Information technology provides the opportunity to the employees to share knowledge even from the distance.

Thus, by implementing knowledge sharing atmosphere along with the effective information technology, organizational culture, teamwork, trust, and employee motivation, telecommunication sector of Pakistan can improve their performance by bringing innovation, and earning

competitive advantage.

## LIMITATIONS

The previous study includes important practices to improve the organization performance, but still there are other factors that can also play a remarkable role in increasing knowledge sharing among the employees and improving the profitability of the organization. These few factors are not covered in this research. These practices may include the leadership, role of rewarding and other monetary benefits in the organization.

The impact of leadership may include at teams level or at the top level. The impact of leadership plays a very important role in improving organizations' performance and directing the employees in right direction. The other important role is of rewarding and other incentives offered by the organizations because of efficient knowledge sharing participation. When employees are aware that they got reward as the result of a particular activity they show more interest and devotion in performing that particular activity.

## FUTURE DIRECTIONS

Although the previous study is a strong evidence of knowledge sharing and its various practices in improving overall performance of the organization, but still there are more practices that can be adopt to increase the knowledge sharing among the employees. For the purpose of expansion on the study of knowledge sharing, other practices may be studied. These practices include the study of impact of leadership on knowledge sharing, how much a leader can play an influential role in increasing the knowledge sharing among the employees.

The other factor that plays an important part in creating strong knowledge sharing ties is rewarding system of the organization for the employees who take an active part in knowledge sharing practices and the incentives paid to them by the organization. In rewarding system the performance appraisal system, monetary rewards offered by the organization, and financial and non-financial benefits offered by the organization because of active participation in knowledge sharing practices are included.

## REFERENCES

- Abrams LC, Cross R, Lesser E, Levin DZ (2003). Nurturing interpersonal trust in knowledge-sharing networks. *Acad. Manag. Exec.* 17(4):64-77.
- Al-Alaw i AD, Al-Marzooqi NY, Mohammed YF (2007). Organizational culture and knowledge sharing: critical success factors. *J. Knowl. Manag.* 11(2):22-42.
- Al-Hawamdeh S, Luen TW (2001). Knowledge management in the public sector: principles and practices in police work. *J. Inf. Sci.* 27(5):311-318.
- Anantatmula VS, Kanungo S (2010). Modeling enablers for successful KM implementation. *J. Knowl. Manag.* 14(1):100-113.

- Apostolou D, Mentzas G, Abecker A (2008). Managing knowledge at multiple organizational levels using faceted analogies. *J. Comp. Inf. Syst.* pp.32-49.
- Ardichivili A, Page V, Wentling T (2003). Motivation and barriers to participate in virtual knowledge sharing communities of practice. *J. Knowl. Manag.* 7(1):64-77.
- Barney J (1991). Firms resources and sustained competitive advantage. *J. Manag.* 17:771-792.
- Baron RM, Kenny DA (1986). The moderator-mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations. *J. Pers. Soc. Psychol.* 51:1173-1182.
- Bernus P, Kalpic B (2006). Business process modeling through the knowledge management perspective. *J. Knowl. Manag.* 10(3):40-56.
- Betz F (1993). *Managing Technology: Competing through new ventures.* Inn. Corp. Research (McGraw Hill).
- Bose R (2004). Knowledge Management metrics. *Indus. Manag. Data Syst.* 104(6):457-468.
- Brynjolfsson E, Lorin HM (2000). Beyond Computation: Information Technology, organizational transformation and business performance. *Am. Econ. Assoc.* 14(4):23-48.
- Cabrera A, Cabrera EF (2002). Knowledge-sharing dilemmas. *Org. Stud.* 23(5):687-710.
- Choy CS, Yew WK, Lin B (2006). Criteria for measuring KM performance outcomes in organizations. *Ind. Manag. Data Syst.* 106(7):917-936.
- Cohen W, Levinthal D (1990). Absorptive capacity: a new perspective on learning and innovation. *Adm. Sci. Q.* 35:128-52.
- Connelly CE, Kelloway EK (2003). Predictors of employees perceptions of knowledge sharing cultures. *Leadersh. Org. Dev. J.* 24(5):294-301.
- Conner KR, Prahalad CK (1996). A resource based theory of the firm: knowledge versus opportunism. *Organ. Sci.* 7: 477-501.
- Dirks KT, Ferrin DL (2001). The Role of Trust in Organizational Settings. *Organ. Sci.* 12(4):450-467.
- Dyer JH, Nobeoka K (2000). Creating and managing a high-performance knowledge sharing network: the Toyota case. *Strat. Manag. J.* 21(3):345-367.
- Fernie S, Green SD, Weller SJ, Newcombe R (2003). Knowledge sharing: context, confusion and controversy. *Int. J. Project Manag.* 21(3):177-187.
- Forrester R, Drexler AB (1999). A model for team-based organization performance. *Acad. Manag. J.* 13(3):36-49.
- Foss NJ, Husted K, Michailova S (2010). Governing Knowledge Sharing in Organizations: Levels of Analysis, Governance Mechanisms, and Research Directions. *J. Manag. Stud.* 47(3).
- Francis D, Bessant J (2005). Targeting innovation and implications for capability development. *Technovation*, 25(3): 171-183.
- Galende J, Fuente JM (2003). Internal factors determining the firm's innovation behaviour. *Res. Policy*, 32: 715-736.
- Ginman M, Widen-Wulff G (2004). Explaining knowledge sharing in organizations through the dimensions of social capital. *J. Inf. Sci.*, 30(5): 448-458.
- Gruenfeld DH, Mannix EA, Williams KY, Neale MA (1996). Group composition and decision making: How member familiarity and information distribution affect process and performance. *Org. Beh. Hu. Dec. Process*, 67(1): 1-15.
- Gupta RK, Dasgupta M (2009). Innovation on organization: A review of the Role of Organizational learning and Knowledge Management. *Glob. Bus. Rev.*, 10(2): 203-224.
- Gupta S (2003). Knowledge Management and Performance: A fit Perspective. *Am. Conf. Info. Syst. (AMCIS)*.
- Hall H (2001). Input-friendliness: motivating knowledge sharing across intranets. *J. Inf. Sci.*, 27(3): 139-146.
- Han BM, Anantamula VS (2007). Knowledge sharing in IT organizations: A case study. *VINE* 37(4):421-439.
- Harisson D, Samaon D (2002). McGraw Hill, New York. *Technology Management: Text and international Cases.*
- Hedlund G, Nonaka I (1993). Implementing strategic process: change, learning and cooperation. *M. Knowl. Manag.* pp.117-144.
- Hendriks P (1999). Why share knowledge? The influence of ICT on the motivation for sharing knowledge. *Knowl. Process Manag.* 6(2):91-100.
- Ho CT (2009). The relationship between knowledge management enablers and performance. *Ind. Manag. Data Syst.* 109(1):74-97.
- Hong P, Doll WJ, Nahm A, Li X (2004). Knowledge sharing in integrated product development. *Eur. J. Innov. Manag.* 7(2):102-112.
- Hooff BV, Weenan FD (2004). Committed to share: commitment and CMC use as antecedents of knowledge sharing. *Knowl. Process Manag.* 11:13-24.
- Huang Q, Davison RM, Gu J (2008). Impact of personal and culture factors on knowledge sharing in China. *Asia P. J. Manag.* 25:451-471.
- Husted K, Michailova S, Minbaeva D (2005). Knowledge sharing and organizational performance: The role of extrinsic and intrinsic motives. Presented in International HRM Conference in Australia.
- Jordan J, Jones P (1997). Assessing your company's knowledge management style. *Long Range Plann.* 30(3):392-398.
- Ju TL, Li CY, Lee TS (2006). A contingency model for knowledge management capability and innovation. *Indus. Manag. Data Syst.* 106(6):855-877.
- Kalseth K, Cummings S (2001). Knowledge Management: development strategy or business strategy? *Inf. Dev.* 17(3):163-171.
- Kasper H, Lehrer M, Muhlbacher J, Muller B (2009). Integration-responsiveness and knowledge-management perspectives on the MNC. *J. Leadersh. Org. Stud.* 15(3):287-303.
- Kearns GS, Lederer AL (2003). A resource-based view of strategic IT alignment: How knowledge sharing creates competitive advantage. *J. Decis. Sci.* 34(1):1-29.
- Kongpichayanond P (2009). Knowledge management for sustained competitive advantage in mergers and acquisitions. *Adv. Dev. Hum. Resourc.* 11(3):375-387.
- Lee SM, Hong S (2002). Industrial Management and Data Systems. An enterprise-wide knowledge management system infrastructure 102(1):17-25.
- Liao SH (2003). Knowledge management technologies and applications-a literature review from 1995-2002. *Exp. Syst. Appl.* 25(2):155-164.
- Liao SH, Chang JC, Kuo CM (2004). Employee relationship and knowledge sharing: A case study of a taiwanese finance and securities firm. *Knowl. Manag. Res. Pract.* 2:24-34.
- Liao SH, Fei WC, Chen CC (2007). Knowledge sharing, absorptive capacity, and innovation capability: an empirical study of Taiwan's knowledge-intensive industries. *J. Inf. Sci.* 33(3):340-359.
- Liao SH, Wu CC, Hu DC, Tsui KA (2010). Relationships between knowledge acquisition, absorption capacity and innovation capability: an empirical study on Taiwan's financial and manufacturing industries. *J. Inf. Sci.* 36(1):19-35.
- Liebowitz J (2001). Knowledge Management and its link to artificial intelligence. *Expert Syst Appl.* 20:1-6.
- Lin CP (2007). To share or not to share: Modeling tacit knowledge sharing, its mediators and antecedents. *J. Bus. Ethics* 70(4):411-428.
- Lin HF (2007). A stage model of knowledge management: an empirical investigation of process and effectiveness. *J. Inf. Sci.* 33(6):643-659.
- Lin HF, Lee HS, Wang DW (2009). Evaluation of factors influencing knowledge sharing based on a fuzzy AHP approach. *J. Inf. Sci.* 35(1):25-44.
- Lin HF (2007). Effects of extrinsic and intrinsic motivation on employee knowledge sharing intentions. *J. Inf. Sci.* 33(2):135-149.
- Lin HF (2007). Knowledge sharing and firm innovation capability: an empirical study. *Int. J. Manpow.* 28(3/4):315-332.
- Lu Y, Tsang EW, Peng MW (2008). Knowledge management and innovation management in the Asia Pacific: toward an institution based view. *Asia P. J. Manag.* 25(3):361-374.
- Mahmood MA (1993). Measuring the organizational impact of information technology investment: an exploratory study. *J. Manag. Info. Syst.* 10(1).
- Man MG, Wulff GI (2004). Explaining knowledge sharing in organization through the dimensions of social capital. *J. Inf. Sci.* 30(5):448-456.
- Marceau S, Sawaka K (1999). Developing a world-class CI program in telecoms. *Comp. Intel. Rev.* 10(4):30-40.
- Marcoulides GA, Ronald HH (1993). Organizational Culture and Performance: Proposing and Testing a Model. *Organ. Sci.* 4(2):209-225.
- Marques DP, Simon FJ (2006). The effect of knowledge management practices on firm performance. *J. Knowl. Manag.* 10(3):143-156.

- Matusik SF, Hill CW (1998). The utilization of Contingent work, knowledge creation, and competitive advantage. *Aca. Manag. Rev.* 23(4):680-697.
- McEvily SK, Das S, McCabe K (2000). Avoiding competence substitution through knowledge sharing. *Acad. Manag. Rev.* 25(2):294-311.
- McNeil CM (2003). Line managers: Facilitators of knowledge sharing in teams. *Emp. Relat.* 25(3):294-307.
- Mei YM, Lee ST, Al-Hawamedeh S (2004). Formulating a communication strategy for effective knowledge sharing. *J. Inf. Sci.* 30(1):12-22.
- Melville, N., Kraemer, K., Gurbaxani, V. (2004). Information Technology and Organizational Performance: An Integrative Model of IT Business Value. *MIS Quart.* 28(2):283-322.
- Mujahid YH (2002). Digital Opportunity Initiative for Pakistan. *The Electronic Journal on Information Systems in Developing Countries*, EJSDC 8(6):1-14.
- Ndilela LT, Toit AS (2001). Establishing a knowledge management programme for competitive advantage in an enterprise. *Int. J. Inf. Technol.* 21(2):151-165.
- Neches R, Fikes RE, Finin T, Gruber T, Patil R, Senator T, William RS (2010). Enabling technology for knowledge sharing. *AI-Magazine Ass. Advan. Knowl. Sharing*, 12(3).
- Nieto M, Quevedo P (2005). Absorptive capacity, technological opportunity, knowledge spillovers and innovative effort. *Technovation*, 25: 1141-1157.
- Nonaka I, Takeuchi H (1995). *The knowledge creating company*. Oxford University Press, New York.
- O' Reilly CA, Chatman J, Caldwell DF (1991). People and Organizational Culture: A Profile Comparison Approach to Assessing Person-Organization Fit. *The Acad. Manag. J.* 34(3): 487-516.
- Ooi KB, Cheah WC, Lin B, Teh PL (2010). TQM practices and knowledge sharing: An empirical study of Malaysia's manufacturing organization. *Asia Pac. J. Manag.* pp.1-20
- Quinn JB, Anderson P, Finklestein S (1996). Managing professional intellect: Making the most of the best, *Harvard Bus. Rev.*, 74: 71-80.
- Raymond L, Pare G, Bergeron F (1995). Matching information technology and organizational structure: An empirical study with implications for performance. *Eur. J. Inf. Technol.* 4: 3-16.
- Rezgui Y (2007). Knowledge systems and value creation. *Indus. Manag. Data Syst.* 107(2):166-182.
- Samson D (1991). *Manufacturing and Operations Strategy*. Prentice Hall.
- Sherif K (2006). An adaptive strategy for managing knowledge in organizations. *J. Knowl. Manag.* 10(4):72-81.
- Silvi R, Cuganesan S (2006). Investigating the management of knowledge for competitive advantage: A strategic cost management perspective. *J. Intel. Capital*, 7(3): 309-325.
- Sobel ME (1982). Asymptotic confidence intervals for indirect effects in structural equation models. *Soc. Methodol.* pp.290-312.
- Srivastava A, Bartol KM (2002). Encouraging Knowledge Sharing: The role of Organizational Reward Systems. *J. Leadersh. Org. Stud.* 9(1):64.
- Srivastava A, Bartol KM, Locke EA (2006). Empowering Leadership in Management Teams: Effects on knowledge sharing, efficacy, and performance. *Acad. Manag. J.* 49(6):1239-1251.
- Wang WT (2009). Knowledge management adoption in times of crises. *Ind. Manag. Data Syst.* 109(4):445-462.
- Wenger E, McDermott R, Snyder WM (2003). *Cultivating communities of practice*. Harvard Business School Press, Boston.
- Widen-Wulff G, Ginman M (2004). Explaining knowledge sharing in organizations through the dimensions of social capital. *J. Inf. Sci.* 30(5):448-458.
- Widen-Wulff G, Ek S, Ginman M, Perttila R, Sodergard P, Totterman AK (2008). Information behavior meets social capital: a conceptual model. *J. Inf. Sci.* 34(3):346-355.
- Wilkins AL, William OG (1983). Exploring the Relationship Between Culture and Organizational Performance. *Adm. Sci. Q.* 28(3):468-481.
- Willem A, Scarbrough H, Buelens M (2008). Impact of coherent versus multiple identities on knowledge integration. *J. Inf. Sci.* 34(3):370-386.
- Yang C, Chen LC (2007). Can organizational knowledge capabilities affect knowledge sharing behavior? *J. Inf. Sci.* 33(1):95-109.
- Yang HD, Moon YJ, Rowley C (2009). Social influence on knowledge workers adoption of innovation information technology. *J. Comp. Inf. Syst.* 50(1):25-34.
- Yang JT (2004). Job related knowledge sharing: comparative case studies. *J. Knowl. Manag.* 8(3):118-126.
- Yang JT (2006). Knowledge Management: Investigating appropriate goal and collaborative culture. *Tourism Manag.* 28(2):530-543.
- Zaheer A, McEvily B, Perrone V (1998). Does Trust Matter? Exploring the Effects of Interorganizational and Interpersonal Trust on Performance. *Org. Sci.* 9(2):141-159.