Available online at www.sciencedirect.com

ScienceDirect

Procedia - Social and Behavioral Sciences 235 (2016) 729 – 738

Procedia
Social and Behavioral Sciences

12th International Strategic Management Conference, ISMC 2016, 28-30 October 2016, Antalya, Turkey

Mediating Role of Trust on the Effects of Knowledge Management Capabilities on Organizational Performance

Saad Alaarj [a] , Zainal Abidin-Mohamed[b] , Ummi Salwa Binti Ahmad Bustamam[c], a*

[a,b,c] *Universiti Sains Islam Malaysia (USIM), Nilai, 71800, Malaysia*

Abstract

Knowledge Management Capabilities (KMC) have got two major components namely processes and infrastructure. Researchers relate the effect of KMC either to the processes or its infrastructure. But many KMC studies did not consider trust as an important influential variable. This study then seeks not only to identify and compare the effects of processes and infrastructures of KMC on organizational performance of Malaysian public listed companies, but also to bring in trust as a variable that mediates between these two groups of variables. Data from 176 usable questionnaires from senior managers of companies listed in the Malaysian Stock Market (Bursar Malaysia), were analysed using Analysis of Moment Structure (AMOS) software. The findings indicate that effects of the process capabilities component of the KMC are more dominant for organizational performance than its infrastructure capabilities. In addition, the effects on organizational performance are, the sharing, utilization and acquisition of knowledge (in that order) followed by organizational culture and structure, and finally technology infrastructure. Finally, the mediating role of trust was confirmed. Thus building organizational trust between employees and manager could enhance organizational performance.

Peer-review under responsibility of the organizing committee of ISMC 2016.

Keywords: Knowledge Management Capabilities, Trust, Organizational Performance, Knowledge Sharing, Organizational Culture

1. Introduction

Knowledge management capabilities (KMC) contribute to the organizational performance in the form of innovation, new product development, and competitiveness (Cepeda & Vera, 2007; Abidin-Mohamed et al., 2009; Chang & Chuang, 2011; Chen & Fong, 2012; Villar et al., 2014). This is due to the fact that achieving superior organizational performance depends equally on tangible assets such as the natural resource and intangible assets such as knowledge (Lee & Sukoco, 2007). KMC is defined as an organization's ability to accumulate critical knowledge resources and manage their assimilation and exploitation (Miranda et al., 2011) or as the ability to mobilize and deploy KM-based resources in combination with other resources and capabilities (Chang & Chuang, 2011).

Early research in KMC can be traced back to 2001 with the work of Gold et al. (2011) who divided KMC into processes and infrastructure capabilities. The first includes knowledge acquisition, conversion, application and protection while the latter includes technology infrastructure, structure, and culture (Alavi & Leidner, 2001; Gold et al., 2001; Liu et al., 2004; Tseng, 2014). Taken together these capabilities determine the KMC of an organization,

* Corresponding author. Tel.: +60163576078; fax:+60387336627. *E-mail address:* saadalarag@hotmail.com

Peer-review under responsibility of the organizing committee of ISMC 2016.
doi:10.1016/j.sbspro.2016.11.074

which in turn is linked to various measures of organizational performance such as competitive advantage, competitiveness, and innovation (Gold et al., 2001; Lee & Sukoco, 2007). Nevertheless, previous studies associate the outcome of KMC to either processes capabilities (Ju et al., 2006; Sambasivan et al., 2009; Liu & Deng, 2015; Wu & Chen, 2014) or infrastructure capabilities (Cepeda & Vera, 2007; Chuang, 2004). Few attribute the organizational performance to both (Gold et al., 2001; Fan et al., 2009). A combination of both capabilities can provide a coherent and systematic knowledge support to daily organizational activities and can determine the organizational KMC (Gold et al., 2001; Mills & Smith, 2011; Lee & Sukoco; Sandhawalia & Dalcher, 2011). Both capabilities are used as either a mediator or a moderator (Cepeda & Vera, 2007; Ju et al., 2006; Tseng & Lee, 2014; Chen & Fong, 2012; Wu & Chen, 2014) while few studies tests the direct effect of the constructs on organizational performance (Liu et al., 2004; Cold et al., 2001). In addition, the findings of researchers regarding the direct effect of the KMC components are inconclusive. While some considers the knowledge application is the most important components (Mills & Smith, 2011; Liu & Deng, 2015), others find organizational culture and structure (Pandey & Dutta, 2013).

Activities of KM require a culture of trust between the organizational members. Researchers urge organizations to establish a trust culture (Sandhawalia & Dalcher, 2011; Abidin-Mohamed et al., 2014). This is because; lack of trust is the major reason for not sharing knowledge among organizational members (Currie & Kerrin, 2003; Gharakhani & Mousakhani, 2012). Nevertheless, our search reveals that trust and its mediating effect are slightly investigated by researchers in the area of KMC. Empirical evidences show that trust could play a mediating role in the relationship between industrial cluster involvement and knowledge obtaining (Niu, 2010).

Previous studies focus on countries such as European countries and United States (U.S). In the emerging economies, Taiwan received much attention compared with other countries (Ju et al., 2006; Wu & Chen, 2014). In Malaysia, the government has adopted a strategy to transform to knowledge based economy during the 1990s to fulfill the vision of 2020 (high income nation). However, despite the support and encouragement of knowledge based economy, many Malaysian organizations are not effectively managing and utilizing knowledge (Moshari, 2013; Ramin et al., 2013).

This paper aims to contribute to the literature related to the effect of KMC on the organizational performance. KMC consists of two constructs. The first is knowledge process capabilities with three components: knowledge acquisitions, knowledge sharing, and knowledge utilization. The second is knowledge infrastructure capabilities with three components: organizational culture, organizational structure, and technology infrastructure. In addition, the study tests trust as a mediator between KMC and organizational performance. Both financial and non-financial indicators are considered as the components of organizational performance. The paper consists of six sections. First section discusses the background of the study along with the issues and objectives. Literature review is given in second section. Third section discusses the development of the conceptual model and the hypotheses of the study. The research methodology is given in the fourth section. Fifth section presents the findings. Conclusion and direction for future work are given in sixth section.

2. Literature Review And Hypotheses

2.1. Knowledge Process Capabilities

Knowledge process capabilities are defined in this study as systematic processes that enable organizations to acquire, share and utilize effectively the organizational knowledge. Processes were varied in the literature based on the perception of researchers and the nature of their studies. For example, processes include acquisition, conversion, application and protection (Gold et al., 2001; Fan et al., 2009; Liu & Deng, 2015); acquisition, conversion and application (Ju et al., 2006); obtaining, refining, storing, and sharing (Liu et al., 2004); creation, transfer, integration, application (Wu & Chen, 2014); transfer, conversion, protection (Tseng & Lee, 2014; Tseng, 2014); acquisition, sharing, application (Gharakhani & Mousakhani, 2012); acquisition, dissemination, utilization (Chen & Fong, 2012).

Overall, knowledge processes capabilities are considered as systematic processes that start with acquiring the knowledge from internal and external sources. Next, the knowledge is shared among organizational members to create new knowledge or to avoid reinventing the wheel. Lastly, the shared knowledge is utilized by the organization and its members. Thus, in this study, the knowledge processes capabilities consists of three components namely acquisition, sharing, and utilization.

2.2. Knowledge Infrastructure Capabilities

Knowledge infrastructure capabilities are defined as the facilitating conditions that are provided by organizations to ease and enable the processes of knowledge. Previous studies argued that it is important for organizations to have supportive knowledge infrastructure capabilities to assist the KM initiative in the organizations (Mills & Smith, 2011). The three components of knowledge infrastructure capabilities of Gold et al. (2001) were used by the majority of researchers (e.g. Chuang, 2004; Chang & Chuang, 2011; Mills & Smith, 2011; Pandey & Dutta, 2013). Therefore, this study follows the approach of previous studies and adopts the three components approach provided by Gold et al. (2001). Namely, the study uses technology infrastructure, organizational culture, and organizational structures as components of knowledge infrastructure capabilities.

2.3. Trust

Trust is defined as the positive expectations individuals have about the intent and behaviours of multiple organizational members based on organizational roles, relationships, experiences, and interdependencies (Shockley-Zalabak et al., 2000). In many cases, the existence of trust between members of an organization may provide the basis for a competitive advantage or a distinctive organizational competence (Zanini & Migueles, 2013). Trust is important for performance and the well-being of the members of an organization in time of crisis (Mishra, 1996). The existence of trust could promote knowledge sharing culture and knowledge transfer (Sandhawalia & Dalcher, 2011). On the other hand, lack of trust was cited as an important reason for employees to not share their knowledge and experience with other organizational members (Currie & Kerrin, 2003; Gharakhani & Mousakhani, 2012; Holste & Fields, 2010). Evidence from the literature showed that trust could play a mediating role in sharing, obtaining, and transferring knowledge (Levin & Cross, 2004; Niu, 2010). Therefore, this study extends the existing literatures and attempts to examine the mediating role of trust between knowledge process capabilities and knowledge infrastructure capabilities, and organizational performance.

2.4. Organizational Performance

Organizational performance has been one of the highly researched dependent variables in the literature (Abdullah et al., 2009; Abidin-Mohamed et al., 2009; Sambasivan et al., 2011). It is the dependent variable for several area of management (Richard et al., 2009) and defined as a set of financial and non-financial indicators which offer information on the degree of achievement of objectives and results (Lebans & Euske, 2006). It is difficult to measure performance without including the external relationship and intangible values such as knowledge, competences, and partnerships. In addition, there is strong limitation for using financial performance as indicator for the organizational performance (Laszlo, 2013). Therefore, using only financial indictors might not measure the real performance of organizations and likewise in case of using only non-financial ones. Financial and non-financial measurements were used as indicators of organizational performance (Tseng, 2014). Maltz et al. (2003) proposed measurements that include financial and non-financial indicators. The author highlighted that there are five performance indices should be incorporated to evaluate performance. These are financial performance, market/ customer, process, people development, and future. Holsapple and Wu (2011) have employed both financial and non-financial measurements. Thus, this study is measuring performance using financial and non-financial indicators. .

3. Conceptual Model and Hypotheses Development

The conceptual model of this study presented in Fig. 1. It was developed based on the literature review of the study. It consists of four constructs. The independent constructs are knowledge process capabilities and knowledge infrastructure capabilities. Organizational performance is the dependent construct of this study and trust is expected to play a mediating role between the independent constructs and the dependent construct.

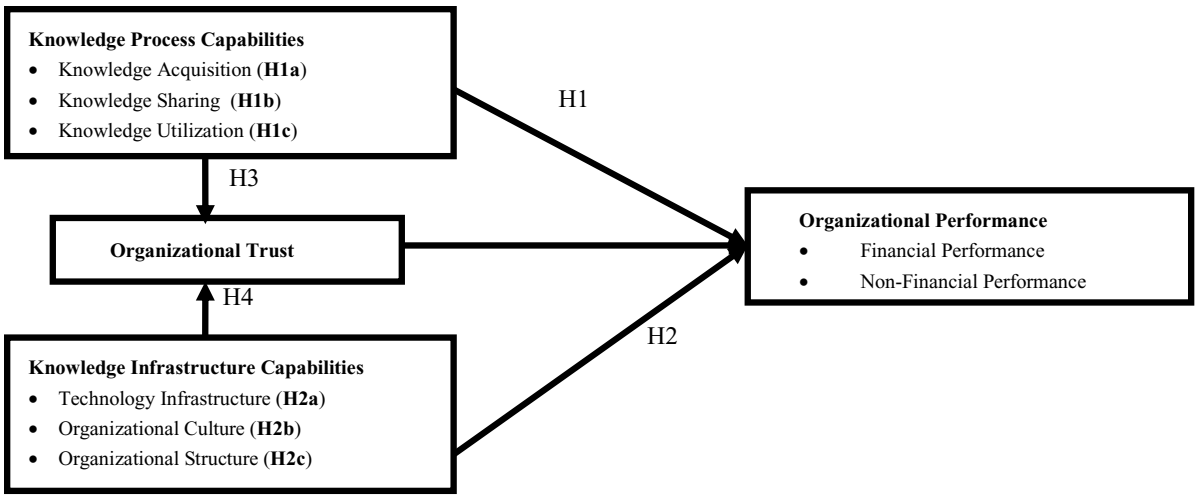

Fig. 1: Conceptual Model

3.1. *Knowledge Process Capabilities*

Knowledge process capabilities were found in many studies to have strong influence on organizational performance (Gold et al. 2001; Liu et al. 2004). It consists of three components that are knowledge acquisition, sharing, and utilizations. Chang and Chung (2011) found the knowledge process capabilities have significant influence on organizational performance. Similarly, Fan et al. (2009) argued that knowledge process capabilities could contribute to the organizational performance. Thus, in this study, it is expected that:

H1: Knowledge process capabilities affect positively the organizational performance.

3.1.1 Knowledge Acquisition

Knowledge acquisition is defined in this study as the process of acquiring knowledge from internal and external sources. It is enabled by the processes and activities of interaction, feedback, innovation, brainstorming, and benchmarking (Nonaka & Takeuchi, 1995). Zahra and George (2002) in their review study argued that acquisition is important component of KMC. Researchers confirmed the direct effect of knowledge acquisition on the organizational performance measures. Knowledge acquisition is a determinant of organizational performance (Gold et al., 2001; Chen & Fong, 2012) and business process outsourcing (Liu & Deng, 2015). Thus, in this study, it is expected that:

H1a: Knowledge acquisition has a significant effect on organizational performance.

3.1.2 Knowledge Sharing

The process of knowledge sharing is viewed as cultural social interaction that involves the exchange of experience, idea, and skills through departments and organizations (Gharakhani & Mousakhani, 2012). Liu et al. (2004) linked the knowledge sharing to the competitiveness of organizations. Supar et al. (2005) pointed out that knowledge sharing affects significantly the performance of higher educational institution. Other researchers derived similar findings. For example, Kuzu and Özilhan, (2014) found that knowledge sharing significantly influences the employees' performance. Chang and Chung (2011) found significant influence of knowledge sharing on business strategy. Chen and Fong (2012) found that the knowledge sharing strongly influence the organizational performance. In this study, it is expected that:

H1b: Knowledge sharing has positive effect on organizational performance.

3.1.3 Knowledge Utilization

Knowledge utilization is defined as routines apply and exploit the newly transformed knowledge to modify and create operating routines that improve performance outcomes (Lee et al., 2011). Previous studies found that to perceive the effect of knowledge on the organizational performance, the knowledge has to be utilized effectively in the organizational process. Therefore, the perceived benefits of knowledge will only be realized once the acquired and shared knowledge transformed to capability that affects the organizational performance (Seleim & Khalil, 2007; Zahra & George, 2002). Empirical findings of previous studies such as Chen and Fong (2012; 2015) showed that utilization has strong effect on business performance. Thus, in this study, it is expected that:

H1c: Knowledge utilization affects significantly the organizational performance.

3.2 Knowledge Infrastructure Capabilities

Knowledge infrastructure capabilities are the second construct of this study and it consists of three components: technology infrastructure, organizational culture, and organizational structure. Studies that have investigated the direct effect of knowledge infrastructure capabilities found that the construct has significant effect on organizational performance (Fan et al., 2009; Chang & Chuang, 2011; Sandhawalia & Dalcher, 2011). Thus, in this study, it is expected that:

H2: Knowledge infrastructure capabilities have significant effect on organizational performance.

3.2.1 Technology Infrastructure

Technology infrastructure is defined as the technical systems within an organization, which determines how knowledge travels and accessed (Chang & Chuang, 2011). Miranda et al. (2011) provided examples of technology infrastructure such as database interfaces, data entry screens, and reports provide knowledge about how business transactions are to be conducted. Chang and Chuang (2011) empirically found significant association between technology infrastructure and KM process. Pandey and Dutta (2013) derived similar findings. Gold et al. (2001) linked the technology infrastructure to the organizational performance. Thus, in this study, it is expected that:

H2a: Technology infrastructure has a positive effect on organizational performance.

3.2.2 Organizational Culture

Culture is defined as the degree to which organizational culture provides support for viewing knowledge as valuable assets and resources (Chang & Chuang, 2011). In the context of KM, culture is considered as a complex collection of values, beliefs, behaviors, and symbols that influences KM in organizations (Ho, 2009). Chang and Chung (2011) and Gold et al. (2001) incorporated organizational culture and found significant relationship with organizational performance. Similar findings were derived by Mills and Smith (2011), and Pandey and Dutta, (2013). Thus, in this study, it is expected that:

H2b: Organizational culture has significant effect on organizational performance.

3.2.3 Organizational Structure

Organizational structure is defined as the extent of an organization's structural disposition toward encouraging knowledge-related activities (Chang & Chuang, 2011). It comprises the organizational hierarchy, rules and regulations, and reporting relationships (Herath, 2007). Pandey and Dutta, (2013) pointed out that organizational

structure plays a facilitating and steering role in developing the culture of knowledge. The findings of previous studies showed that organizational structure can affect competitive advantage (Chuang, 2004); organizational performance (Chang & Chung, 2011); KM initiation (Fan et al., 2009); and KM effectiveness (Aujirapongpan et al., 2010). Thus, in this study, it is expected that:

H2c: Organizational culture has significant effect on organizational performance.

3.3 Trust as a Mediator

The existence of trust is important to promote organizational knowledge sharing (Sandhawalia & Dalcher, 2011). Trust facilitates the processes of KM such as sharing, transferring and obtaining (Holste & Fields, 2010). The absence of trust affects the willingness of employees to share their tacit and explicit knowledge (Currie & Kerrin, 2003; Gharakhani & Mousakhani, 2012; Holste & Fields, 2010). Previous studies have found that trust could facilitate the organization's ability to enhance relationships, collect information related to market and technology development, and establish beneficial knowledge sharing internally and externally (Romijn & Alabaladejo, 2002; Abidin-Mohamed et al., 2014). Collaboration, interaction, and exchange of knowledge are all enabled once the organization creates a culture of trust (Miles, 2007).

Levin and Cross (2004) found that trust could play a mediating role for knowledge transfer. It is also found to mediate partially the relationship between industrial cluster involvement and knowledge obtaining (Niu, 2010). In online business environment, trust has been employed as a mediator of relationships between behavioral intentions and individual characteristics, online environments and information technology (Gefen & Straub, 2004; Kim & Park, 2013). Thus, in this study, trust is expected to play a mediating role. Therefore, it can be hypothesized that:

H3: Trust mediates the relationship between knowledge process capabilities and organizational performance.
H4: Trust mediates the relationship between knowledge infrastructure capabilities and organizational performance.

4. Research Methodology

4.1 Population and Sampling

The population of this study is senior managers who are employed by public listed companies in Malaysia. The study employs a convenience sampling technique. This is because this sampling method is easy for data collection (Fraenkel, Wallen & Hyun, 1993). Gold et al. (2001) and Mills and Smith (2011) argued that highly educated respondents, who are working in management level, are suitable for KMC studies because they are aware of the KM activities in the organization.

4.2 Instrument

This study employed an online questionnaire as the instrument of data collection. Ten point Likret scale was used to assess the questions. The scale ranges from (1) strongly disagree and (10) strongly agree. Source of measurement and number of items as well as the Cronbach's Alpha of pilot study is given in Table 1.

Table 1: Source of Measurement and Result of Pilot Study

Variables	Number of items	Cronbach's Alpha of pilot study (N=31)	References
Knowledge acquisition (KA)	4	.81	Yang et al (2014)
Knowledge sharing (KS)	5	.90	Liebowitz and Yan (2004)
Knowledge utilization (KU)	4	.73	Chen and Fong (2012)
Technological Infrastructure (TI)	6	.91	Van Den Hooff and Huysman (2009)
Organizational Culture (OC)	8	.94	Van Den Hooff and Huysman (2009)
Organizational structure (OS)	4	.87	Van Den Hooff and Huysman (2009)
Trust (INT)	4	.89	Huff and Kelley (2005)
Financial performance (FP)	4	.83	Tseng (2014)
Non-financial performance (NFP)	8	.87	Tseng and Lee (2014)

4.3 Data Collection

For field study, a total of 419 questionnaires were mailed to respondents using social media website such as Facebook, LinkedIn, and network referral who distributed the questionnaire to those who met the criteria of this study. Data collection took place between July and September 2015. A total of 176 usable questionnaires were returned. The sample size is considered medium. However, it meets the criteria that are set by researchers in Structural Equation Modeling (SEM) (Hair et al., 2010). In addition, researchers who studied KMC using SEM employed similar sample size such as Chen and Fong (2012) who employed Analysis of Moment Structures (AMOS) with 143 responses and Villar et al. (2014) with 157 responses.

5. Data Analysis

5.1 Demographics and Descriptive Statistics

Table 2 presents the demographic information of the respondents. The sample of this study included 138 males (78.4%) and 38 females (21.6%). The majority of 151 (85.8%) is in the age range between 31 and 50 years old. More than 125 (71.6%) had master or PhD degree.

Table 2: Demographic Information

Variable		Count (%)
Age	Less than 30 years old	14 (8%)
	31-40 years old	125 (71%)
	41-50 years old	26 (14.8%)
	over 50 years old	11 (6.3%)
Gender	Male	138 (78.4%)
	Female	38 (21.6%)
Education	Bachelor degree	50 (28.4%)
	Master degree	102 (58%)
	PhD degree	24 (13.6%)

5.2 Hypotheses Testing

5.2.1 Direct Effect

The hypotheses testing of this study was conducted after finalizing the structural model. Direct and indirect hypotheses were tested. The result of hypotheses testing is given in Table 3.

Table 3: Hypotheses Testing of Direct Effect

H	D.V		I.V	Estimate	S.E.	C.R.	P	Label
H1	Organizational Performance	<---	Processes Capabilities	.72	.12	5.89	.00	Significant
H1a	Organizational Performance	<---	Knowledge Acquisition	.19	.05	3.49	.00	Significant
H1b	Organizational performance	<---	Knowledge Sharing	.46	.09	4.81	.00	Significant
H1c	Organizational performance	<---	Knowledge Utilization	.20	.05	3.94	.00	Significant
H2	Organizational Performance	<---	Infrastructure Capabilities	.25	.07	3.39	.00	Significant
H2a	Organizational Performance	<---	Technology Infrastructure	.08	.04	2.15	.03	Significant
H2b	Organizational Performance	<---	Organizational Culture	.16	.04	3.71	.00	Significant
H2c	Organizational performance	<---	Organizational structure	.11	.04	2.77	.01	Significant
R^2	**.793**							

The first hypotheses predicted that the effect of knowledge process capabilities is significant. As predicted, knowledge process capabilities has strong effect on organizational performance (β= 0.72, P=0.00). Thus, H1 is supported. Similarly, we predicted that knowledge acquisition has significant effect on organizational performance. Our findings confirmed the hypothesis (β= 0.19, P=0.00). Thus, H1a is supported. Other sub-hypotheses related to knowledge sharing (β= 0.46, P=0.00), and knowledge utilization (β= 0.20, P=0.00) were also found significant as we predicted. Thus, H1b and H1c are supported.

The second main hypothesis expected the effect of knowledge infrastructure capabilities to be significant. As expected, the effect is significant (β= 0.25, P=0.00). Similarly, we predicted that the effect of the components of knowledge infrastructure capabilities to have significant effects on organizational performance. Our predictions were true. Technology infrastructure has positive and significant effect on organizational performance (β= 0.08, P=0.03). The organizational culture (β= 0.16, P=0.00) as well as the organizational structure (β= 0.11, P=0.01) affect significantly the organizational performance. Overall, it can be concluded that H2, H2a, H2b, and H2c are supported. Lastly, the findings of structural model indicated that the construct model (second order) could explain 79% of the variation (R^2) in the organizational performance (see Table 3).

5.2.2 Mediating Effect

Trust was proposed to mediate the relationship between knowledge process capabilities and organizational performance. Table 4 shows the result of hypotheses testing for the related paths.

Table 4: Hypotheses Testing of Mediating Effect

			Estimate	S.E.	C.R.	P	Label
Trust	<---	Processes capabilities	.51	.18	4.62	.00	Sig
Trust	<---	Infrastructure capabilities	.55	.15	3.78	.00	Sig
Organizational Performance	<---	Infrastructure capabilities	.12	.06	1.86	.06	Not Sig
Organizational Performance	<---	Processes capabilities	.65	.10	6.32	.00	Sig
Organizational performance	<---	Trust	.25	.04	6.84	.00	Sig

Note: Sig: Significant

It shows that once trust entered the relationship between knowledge process capabilities and organizational performance, the direct effect of knowledge process capabilities decreased from (β= 0.72 in Table 7) to (β= 0.65 in Table 4). This drop indicates that there is mediating effect of trust. However, the mediation is partial because the direct effect is still significant (β= 0.65, P=0.00). Thus, H3 is supported and trust has a partial mediating role between knowledge process capabilities and organizational performance.

Trust was also proposed to mediate the relationship between knowledge infrastructure capabilities and organizational performance. The findings shows that the direct effect reduced (β= 012, P=0.06) and it is not significant. While before trust entering the relationship, the direct effect was significant (β= 0.25, P=0.00). Thus, the mediation occurred and it is full mediation because the direct effect is not significant anymore. Therefore, H4 is supported and trust fully mediates the relationship between knowledge infrastructure capabilities and organizational performance.

The finding of this study are in agreement with previous studies. Gold et al. (2001) and Mills and Smith (2011) who found knowledge process capabilities are more important than knowledge infrastructure capabilities. We found also that in the absence of trust, organizational members will be unwilling to share their knowledge or to ask other colleagues for information related to daily routine work (acquisition). These findings are in agreement with the previous studies that found trust to mediate partially the knowledge obtaining and industrial cluster involvement (Niu, 2010).

6. Conclusion

The findings of the study indicate that for KMC to be effective, its capabilities on the process component must be given higher priority than the infrastructure. Knowledge sharing has the strongest significant effect on organizational performance followed by the others. The findings also revealed a full mediation effect of trust was found between Knowledge infrastructure capabilities and organizational performance. But trust could only mediate partially the relationship between them. The study provides avenues for managers with practical alternatives to improve organizational performance and aware of the role of trust in the relationship. Areas of new research have also been suggested to enrich the literature linking KMC with organizational performance.

This study was conduct using AMOS. The sample size is considered small to medium. It is recommended for future study to expand the sample size to include more responses. In addition, future researcher could be conducted by choosing different sample such as choosing the employees in operational level. Further, more studies in KMC and trust are needed in emerging economies. Lastly, while quantitative studies have been done widely, probing deeper qualitatively can reveal some new dimensions not yet researched deeply especially human governance, religiosity and ethic.

References

Abdullah, H. H., Abidin-Mohamed, Z., Othman, R., & Uli, J. (2009). The effect of sourcing strategies on the relationship between competitive strategy and firm performance. International Review of Business Research Papers, 5(3), pp 346-361

Abidin-Mohamed, Z., Ann, H. J., & Yee, W. P. (2014). Strategic Management. Oxford University Press.

Abidin-Mohamed, Z., Abdullah, H. H., Othman, R., & Uli, J. (2009). Make or Buy Strategy and Origin of Sourcing Materials and Their Relationship with Firm Performance. International Review of Business Research Papers, 5(3), pp 142-155.

Alavi, M., & Leidner, D. E. (2001). Review: Knowledge management and knowledge management systems: Conceptual foundations and research issues. MIS quarterly, 25 (1) pp 107-136.

Aujirapongpan, S., Vadhanasindhu, P., Chandrachai, A., & Cooparat, P. (2010). Indicators of knowledge management capability for KM effectiveness. VINE, 40 (2), pp 183-203.

Cepeda, G., & Vera, D. (2007). Dynamic capabilities and operational capabilities: A knowledge management perspective. Journal of Business Research, 60(5), pp 426-437.

Chang, T. C., & Chuang, S. H. (2011). Performance implications of knowledge management processes: Examining the roles of infrastructure capability and business strategy. Expert Systems with Applications, 38(5), pp 6170-6178.

Chen, L., & Fong, P. S. (2012). Revealing performance heterogeneity through knowledge management maturity evaluation: A capability-based approach. Expert Systems with Applications, 39(18), pp 13523-13539.

Chen, L., & Fong, P. S. (2015). Evaluation of knowledge management performance: An organic approach. Information & Management, 52(4), pp 431-453.

Currie, G., & Kerrin, M. (2003). Human resource management and knowledge management: enhancing knowledge sharing in a pharmaceutical company. The International Journal of Human Resource Management, 14(6), pp 1027-1045.

Fan, Z. P., Feng, B., Sun, Y. H., & Ou, W. (2009). Evaluating knowledge management capability of organizations: a fuzzy linguistic method. Expert Systems with Applications, 36(2), pp 3346-3354.

Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (1993). How to design and evaluate research in education (Vol. 7). New York: McGraw-Hill.

Gefen, D., & Straub, D. W. (2004). Consumer trust in B2C e-Commerce and the importance of social presence: experiments in e-Products and e-Services. Omega, 32(6), pp 407-424.

Gharakhani, D., &Mousakhani, M. (2012). Knowledge management capabilities and SMEs' organizational performance. Journal of Chinese Entrepreneurship,4(1), pp 35-49.

Gold, A.H., Malhotra, A., Segars, A.H. (2001), "Knowledge management: an organizational capabilities perspective", Journal of Management Information Systems, Vol. 18 No.1, pp.185-214.

Golin, A. (2004). Trust or Consequences: Build trust today or lose your market tomorrow. Princeton University Press.

Laszlo, F. G. (2013). Analysis Of The Impact Of The Supply Chain Performance On The Overall Organizational Performance. Annals of Faculty of Economics, 1(1), pp 1505-1510

Hair Jr, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2010). SEM: An introduction. Multivariate Data Analysis: A global perspective. Upper Saddle River, NJ: Pearson.

Herath, S. K. (2007). A framework for management control research. Journal of management development, 26(9), pp 895-915.

Ho, C. T. (2009). The relationship between knowledge management enablers and performance. Industrial Management & Data Systems, 109(1), pp 98-117.

Holsapple, C. W., & Wu, J. (2011). An elusive antecedent of superior firm performance: The knowledge management factor. Decision Support Systems,52 (1), pp 271-283.

Holste, J. S., & Fields, D. (2010). Trust and tacit knowledge sharing and use.Journal of knowledge management, 14(1), pp 128-140.

Huff, L., & Kelley, L. (2005). Is collectivism a liability? The impact of culture on organizational trust and customer orientation: a seven-nation study. Journal of business research, 58(1), 96-102.

Ju, T. L., Li, C. Y., & Lee, T. S. (2006). A contingency model for knowledge management capability and innovation. Industrial Management & Data Systems, 106(6), pp 855-877.

Kim, S., & Park, H. (2013). Effects of various characteristics of social commerce (s-commerce) on consumers' trust and trust performance.International Journal of Information Management, 33(2), pp 318-332.

Kuzu, Ö. H., & Özilhan, D. (2014). The effect of employee relationships and knowledge sharing on employees' performance: An empirical research on service industry. Procedia-Social and Behavioral Sciences, 109, pp 1370-1374.

Lebans, M., Euske, K. (2006), "A conceptual and operational delineation of performance", Business Performance Measurement". Cambridge University Press

Lee, L. T. S., & Sukoco, B. M. (2007). The Effects of Entrepreneurial Orientation and Knowledge Management Capability on Organizational Effectiveness in Taiwan: The Moderating Role of Social Capital. International Journal of Management, 24(3).

Lee, W. T., Hung, S. Y., & Chau, P. Y. (2011). Influence of knowledge management infrastructure on innovative business processes and market-interrelationship performance: An empirical study of hospitals in Taiwan. Journal of Global Information Management (JGIM), 19(2), pp 67-89.

Levin, D. Z., & Cross, R. (2004). The strength of weak ties you can trust: The mediating role of trust in effective knowledge transfer. Management science,50(11), pp 1477-1490.

Liebowitz, J., & Yan, C. (2004). Knowledge sharing proficiencies: the key to knowledge management. In Handbook on Knowledge Management 1. Springer Berlin Heidelberg.

Liu, S., & Deng, Z. (2015). Understanding knowledge management capability in business process outsourcing: a cluster analysis. Management Decision, 53(1), pp 124-138.

Liu, P. L., Chen, W. C., & Tsai, C. H. (2004). An empirical study on the correlation between knowledge management capability and competitiveness in Taiwan's industries. Technovation, 24(12), pp 971-977.

Maltz, A. C., Shenhar, A. J., & Reilly, R. R. (2003). Beyond the Balanced Scorecard:: Refining the Search for Organizational Success Measures. Long Range Planning, 36(2), pp 187-204.

Miles, R. E. (2007). Innovation and leadership values. California Management Review, 50(1), pp 192-201.

Mills, A. M., & Smith, T. A. (2011). Knowledge management and organizational performance: a decomposed view. Journal of Knowledge Management, 15(1), pp 156-171.

Miranda, S. M., Lee, J. N., & Lee, J. H. (2011). Stocks and flows underlying organizations' knowledge management capability: Synergistic versus contingent complementarities over time. Information & Management, 48(8), pp 382-392.

Mishra, A. K. (1996). Organizational Responses to Crisis. Trust in organizations: Frontiers of theory and research, 261.

Moshari, J. (2013). Knowledge Management Issues in Malaysian Organizations: the Perceptions of Leaders. Journal of Knowledge Management, Economics and Information Technology, 3(5), pp 15-27.

Niu, K. H. (2010). Organizational trust and knowledge obtaining in industrial clusters. Journal of Knowledge Management, 14(1), pp 141-155.

Nonaka, I., & Takeuchi, H. (1995). The knowledge-creating company: How Japanese companies create the dynamics of innovation. Oxford university press.

Pandey, S. C., & Dutta, A. (2013). Role of knowledge infrastructure capabilities in knowledge management. Journal of knowledge management, 17(3), pp 435-453.

Ramin, N. A. M., Taib, K. M., Hashim, D. M., Noordin, S. A., & Yasin, S. M. (2013). Knowledge Management Implementation in a Government Research Institute in Selangor, Malaysia. Communications of the IBIMA, 2013, pp 1-12

Romijn, H., & Albaladejo, M. (2002). Determinants of innovation capability in small electronics and software firms in southeast England. Research policy, 31(7), pp 1053-1067.

Sambasivan, M., Loke, S. P., & Abidin-Mohamed, Z. (2009). Impact of knowledge management in supply chain management: a study in Malaysian manufacturing companies. Knowledge and Process Management, 16(3), pp 111-123.

Sambasivan, M., Siew-Phaik, L., Abidin-Mohamed, Z., & Leong, Y. C. (2011). Impact of interdependence between supply chain partners on strategic alliance outcomes: role of relational capital as a mediating construct. Management Decision, 49(4), pp 548-569.

Sandhawalia, B. S, &Dalcher, D. (2011). Developing knowledge management capabilities: a structured approach. Journal of Knowledge Management, 15(2), pp 313-328.

Seleim, A., & Khalil, O. (2007). Knowledge management and organizational performance in the Egyptian software firms. International Journal of Knowledge Management (IJKM), 3(4), pp 37-66.

Shockley-Zalabak, P., Ellis, K., & Winograd, G. (2000). Organizational trust: What it means, why it matters. Organization Development Journal, 18(4), pp 35-48.

Supar, N., Ibrahim, A.A., Abidin-Mohamed, Z., Yahya, M. and Abdul, M., 2005. Factors affecting knowledge sharing and its effects on performance: a study of three selected higher academic institutions. In *International Conference on Knowledge Management (ICKM)*.

Tseng, S. M., & Lee, P. S. (2014). The effect of knowledge management capability and dynamic capability on organizational performance. Journal of Enterprise Information Management, 27(2), pp 158-179.

Tseng, S. M. (2014). The impact of knowledge management capabilities and supplier relationship management on corporate performance. International Journal of Production Economics, 154, pp 39-47.

Van den Hooff, B., & Huysman, M. (2009). Managing knowledge sharing: Emergent and engineering approaches. Information & Management, 46(1), pp 1-8.

Villar, C., Alegre, J., &Pla-Barber, J. (2014). Exploring the role of knowledge management practices on exports: A dynamic capabilities view. International Business Review, 23(1), pp 38-44.

Wu, I. L., & Chen, J. L. (2014). Knowledge management driven firm performance: the roles of business process capabilities and organizational learning. Journal of Knowledge Management, 18(6), pp 1141-1164.

Yang, L. R., Huang, C. F., & Hsu, T. J. (2014). Knowledge leadership to improve project and organizational performance. International Journal of Project Management, 32(1), pp 40-53

Zahra, S. A., & George, G. (2002). Absorptive capacity: A review, reconceptualization, and extension. Academy of management review, 27(2), 185-203.

Zanini, M. T. F., & Migueles, C. P. (2013). Trust as an element of informal coordination and its relationship with organizational performance. EconomiA,14(2), pp 77-87.