

PROCESS-ORIENTATION DEGREE OF ORGANIZATIONAL CULTURE, KNOWLEDGE SHARING AND KNOWLEDGE MANAGEMENT SUCCESS

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ABSTRACT

Available research on the relationship between organizational culture (OC) and knowledge management success (KMS) has never demonstrated two points which are really critical issues in China, one is the specialized effect of process-orientation dimension of OC on KMS, and the other is the mediating role of knowledge sharing between OC and KMS. By adopting methods of logical reasoning and literature review, the paper proposes a conceptual model to analyze effect mechanism of process-orientation dimension of OC on KMS by introducing knowledge sharing as the mediating variable. Both theoretical analysis results, which are derived from the conceptual model, and simulating quasi-empirical results, which are reached by employing methods of correlation analysis, mean comparison and regression analysis, show that process-orientation degree of OC can improve KMS by positively affecting employees' motives and capability of knowledge sharing, which can both mediate the relationship between process-orientation degree of OC and KMS, but the mediating effect of capability is much higher than that of motives. The novelty of this paper not only lies in originally exploring and confirming the effect of process-orientation degree of OC on KMS, but lies in breaking the black-box of the relationship between the two by introducing and proving knowledge sharing as the mediating variable for the first time. According to the conclusions, when firms carry out knowledge management projects, it is the most important thing to shape process-orientated OC and further improve knowledge sharing activities.

Keywords: *Organizational Culture (OC), Knowledge Management (KM), Knowledge Management Success (KMS), Knowledge Sharing, Process-orientation Degree*

1. INTRODUCTION

Many firms have come to realize that knowledge is their most valuable assets, since the so-called knowledge economy age has irresistibly emerged in the 1990s. A firm should try its best to manage, develop and apply its knowledge-based fortune comprehensively on its own initiative. According to the survey results of American General Business Association, nearly 80% multinationals in the world are conducting KM plans. KM is a broad concept that addresses a range of strategies and practices used in an organization to identify, create, organize, represent, store, share, disseminate, search, analyze and improve its insights and experiences. Such insights and experiences include knowledge, either embodied in individuals or embedded in organizational rules, processes or practices [1]. At

the present time, though the researchers have not reached consensus on the concept and meaning of KM, it has become a common sense that KM, as the so-called "Fifth Generation Management", is a kind of management mode which is the most suitable one in knowledge economy age acting as the only way leading to successful knowledge manipulation [2]. Many scholars regard effective KM as the source of improving organizations' performance which can fully realize the long-term competitive edge [3]. As a matter of course, how to effectively improve KMS has been the attention focus of the theoretical circle.

In the authors' opinion, KM can actually be defined as systematical knowledge manipulation activities, such as searching, acquiring, accumulating, diffusing, transferring, and sharing both the external and internal knowledge, which can



effectively facilitate the knowledge innovation & application, and further realize the potential value of knowledge assets to a good degree. KMS is the essential precondition for modern firms to seek for long-term competitive advantage, and more and more firms commit themselves to KM projects. However, it is a great pity that the probability of KMS is rather low and KMS is determined by many known or unknown factors in reality. It deserves special attention that the existing theoretical investigations on KMS factors mostly focus on the hardware level, such as IT technology, network equipments, and KM systems etc. In the meantime, many firms tend to rate OC, a software level factor, as the key factor when they conclude the success or failure experiences in KM practice, which is obviously in sharp contrast to current mainstream scholars' views[4]. In order to explain such a paradox, more and more researchers have begun to pay much attention to effects of OC on KMS. Within this rising study perspective, KM is more frequently regarded as a kind of management concept & theory which has been penetrating into the heart of each employee step by step, while the prevalent views on KM in the past few years, such as "KM is the application of IT", "KM is technology", and "KM is process management" and so forth, are all improper understandings.

A few studies up to date discussing on KMS from the perspective of OC have expanded the research framework and further provided many valuable research findings, based on which several effective suggestions on improving KMS have been put forward. At the same time, just as indicated by Leidner & Kayworth (2006) [5], it is a pity that existing investigations mostly take OC as a single-dimensioned, stiff and static object when they discuss the relationship between OC and KMS. However, OC bears the nature of vividness, dynamic and comprehensiveness which will determine the limited explaining capability of the existing studies on the relationship between KM and OC in practice. Specifically speaking, the available literature talks about the relationship between the two in general terms taking OC as a static and single whole, while discarding the fact that OC is multi-dimensioned and each dimension has different effects on KMS in different levels. The research at present has not decomposed and expounded the relationship between KMS and each OC dimension to a satisfied degree, especially the discussion on the relationship between KMS and the specified dimension of OC, i.e. process-orientation, is in short. From the old, the evaluation criterion of a person in China has always

emphasized procedural elements, for example, "examining his words and watching his deeds", "we shouldn't judge one to be hero or not according to his achievements", and so on. Therefore, process-orientation is one of the critical elements of Chinese traditional culture and thus has real indigenous characteristics. It is worthy of indicating that the studies on KM from the perspective of OC for Chinese scholars are still in infant stage, and the localized research is still insufficient.

Available research on the relationship between OC and KMS has never mentioned two points which are really critical in the background of Chinese traditional culture, one is the specialized effect of process-orientation dimension of the former on the later, and the other is the mediating role of knowledge sharing between the two. By adopting the methods of logical reasoning and literature review, the paper proposes a conceptual model to analyze the influence mechanism of process-orientation dimension of OC on KMS by introducing knowledge sharing as the mediating variable, and based on which the valuable experiences for firms which are pursuing for KMS by enhancing the process-orientation degree of OC can be drawn on.

2. RELATED WORK

Knowledge is the ability to turn information and data, i.e. known facts, into effective action [6]. Since knowledge is embodied in employees' hidden minds, and simultaneously culture is the outward representations and signals of employees' inward reflections, it is a logical consequence that the effectiveness of KM is inevitably impaired by OC.

The concern on this issue in Academe originates from Davenport & Beers (1998) who has explored 31 KM programs [7]. The study concludes the critical factors of facilitating KM into eight elements: ① To have firms' eyes on the effective connections between KM and economic performance; ② To attach great importance to the establishment of organizational structure and technology platform; ③ to construct a knowledge structure of standard and flexibility; ④ To facilitate the formation of clear KM objective and common language; ⑤ To enhance the accuracy and optimization of KM implementation motives; ⑥ To establish multi-channels of knowledge transfer; ⑦ To make sure the all-out support of the top managers; ⑧ To build knowledge-friendly OC. Of which, the eighth factor is emphasized to a large

degree. According to Davenport & Beers (1998), the basic requirements of knowledge-friendly OC are as follows: First, all employees should have an active and open attitude toward knowledge and continuously keep curiosity on exploring new knowledge; Second, managers can encourage effective knowledge creation and good knowledge use; Third, there should be enough inter-personal trust among employees which can prevent themselves from worrying about the job safety or reward loss due to knowledge sharing behavior, and consequently all staff are quick to share knowledge with others; The last but not least, the implementation of KM must match the features of the present OC, since KM styles should there be differences under different OC. Since then, a number of studies discussing on the relationship between the two from different perspectives gradually emerged.

Based on summarizing the existing documents, the impacting mechanisms of OC on KMS can be concluded as follows: First, OC can help firms run beyond the gap between information technology and knowledge flow, and further make individual knowledge workers to be loyal to the organization; Simultaneously OC is beneficial to building the internal and external netlike communication which can improve trust among employees. In this way, employees would be more willing and capable to share their own specialized knowledge and experience with coworkers when they get involved in KM activities [8][9]; Second, OC can make individual employees be given their proper responsibility and respect, and consequently contribute to the diffusion and acceptance of institutional and procedural information which is the critical factor promoting persistent learning and development [10][11]. In addition, OC will improve employees' attitudes of admitting and adopting new technology which can enhance the effect of knowledge application [12]. Third, OC has a capacity for building the atmosphere of innovation and creation inside a firm which can strengthen the efficiency of knowledge innovation [13][14]. Finally, starting with the opposite perspective, some results propose that the reason of KM failure in practice mostly shows as failing to build and make good use of a positive OC [15].

As stated above, the academe has made excellent contribution in the field of OC and KM. To a certain degree, the above results can not only explain the high failure rates of KM programs in reality better, but they can provide theoretical reference and guidance for KM implementation in

practice. The existing research shows that in order to both understand and pursue the logic of KMS, firms should implement KM activities from three perspectives, namely technology, management and culture. The successful implementation of KM programs in practice not only shows the success of technology, but depends on management reformation and culture change. Hard technology system of KM itself is just a tool, which cannot raise KM up to the level of strategic height only if it combines with enterprise management objectives. Moreover KM cannot penetrate into OC only if its implementation combines with OC change. However, it is worth pointing out that there are certain critical deficiencies for the existing literature in the following two aspects.

First, OC is a dynamic & comprehensive concept which not only owns multiple dimensions but evolves and changes from time to time. The features of each dimension can have different impacts on KM practices in different levels and to different degrees. However, such a fact has not received strong support from the existing studies. The reality is that the existing literature has paid little attention to the relationship between particular dimension of OC and KMS. Of which, the exploration and analysis on the effects of process-orientation dimension of OC on KMS is particularly in shortage. One contribution of this paper is to enrich the studies in this field by focusing on effects of process-orientation dimension of OC on KMS.

Next, KM is even more a comprehensive process of multiple flow links, which at least includes, according to the existing literature on KM, knowledge identification, knowledge acquisition, knowledge integration, knowledge diffusion, knowledge sharing, knowledge innovation and knowledge application, and so on. Each link is indispensable and important to KM. What is more, most of the research only pays attention to the direct relationship between OC and KMS without considering the mediating role of the specific KM activities, which is very important for firms to design the detailed improvement measures for KMS. By the way, till today, the existing literature on the relationship between OC and KM has not clearly explained the effects of OC on the link of knowledge sharing to a satisfied degree, which is the most difficult and critical KM link in China due to the Chinese traditional culture.

Knowledge sharing is widely recognized to be a central component of successful KM, and one of the central characteristics of a healthy knowledge culture is that knowledge sharing is embedded in



the way in which the organization works [16]. In the background of Chinese culture, the importance and difficulty are even intensified to an extreme degree. Obviously such cognition on the relationship between the two tends to be subjective and one-sided which goes against the intentions of guiding KM successfully from the view point of OC. Besides, it is worth pointing out that the domestic research on the relationship between OC and KM is still in its infancy, and the localized study being adapted to Chinese culture background still needs further enriching and perfecting, which is very different from foreign research status. The second contribution of this paper is to investigate the mediated role of knowledge sharing on the relationship between OC and KMS in Chinese background.

Given this, the article below will pursue for improving the research shortcomings, and specialize in the comprehensive effects of process-orientation dimension of OC on KMS mediated by knowledge sharing, based on which suggestions on improving the matching degree between OC and KM from the perspective of knowledge sharing can be provided, in order to deepen and enrich the localized study on the relationship between the two variables.

3. RESEARCH METHOD

Process-orientated OC focuses on how employees complete their jobs, emphasizes on improving the methods and processes of completing job objectives, underlines the behavior and attitudes of completing their jobs, and stresses on the coordination among employees, while result-orientated OC only lays stress on the final realization of results without considering methods and processes, as long as the jobs are done. The final operating results are the basic assurance and precondition of firm survival, so any firm has to pay great attention to them. The operating results, without question, directly depend on individual's job results. Therefore, each firm will have to show result-orientation when it evaluates employee performance. As for enterprises being successful in KM activities, the only know-how is to involve process-orientation into OC correctly when they emphasize the element of result-orientation in OC building. But how to do it well is rather difficult for most of the firms which are doing KM programs.

The nature of KM is dynamic which precisely demands the matching OC with high process-orientation degree. Due to the uncertainty and implicitness of KM activities, only paying attention

to final results would lead to endless troubles on employees' participation motives in KM. Since process improvement must be experienced before enhancing job results, it deserves recommendation that employees should have process-orientated think patterns in participating KM practice [17].

Knowledge sharing is the core of KM which in general is the key obstacle of KMS in China. As we all know, knowledge can be divided into explicit or implicit. Explicit knowledge within an organization can be easily represented by rules, processes, cases, models, data, manuals or other forms. Implicit knowledge, on the other hand, is subjective, experience-based and often context-specific, making it hard to be expressed in a particular language. Studies show that socialization, face-to-face communications and dialogue are relatively powerful vehicles for implicit knowledge sharing [18]. The efficiency and effect of knowledge sharing depend on both the knowledge sharing motives and knowledge sharing capability [19][20]. Though it is difficult to codify, transfer, receive and decode the implicit knowledge, it is still not the most difficult issues faced by enterprises in knowledge sharing practices. The real difficulty is whether or not the employees have the motives of knowledge sharing. According to the common sense, there are two main reasons for the shortage of knowledge sharing motives: to be afraid of losing personal competitive age due to knowledge loss, and to worry about the efforts and behavior can not be recognized and prized officially. As a matter of fact, process-orientated culture can improve knowledge sharing motives and capability effectively by eliminating the negative influence of these two aspects on knowledge sharing motives, and further prompt KMS. Knowledge sharing motives can be expressed in Equation 1.

$$\begin{aligned}
 KSM_t &= F_1 (KSB_{t-1} - KSC_{t-1}) * F_2 (KSA_{t+1}) + KSM_{t-1} \\
 \left\{ \begin{array}{l}
 KSB_{t-1} = f_1(POD) \quad \partial f_1 / \partial POD > 0 \\
 KSC_{t-1} = f_2(POD) \quad \partial f_2 / \partial POD > 0 \\
 KSA_{t-1} = f_3(POD) \quad \partial f_3 / \partial POD > 0 \\
 KSM_{t-1} = F(KSB_{t-2} - KSC_{t-2}) * F(KSA_t) + KIM_{t-2}
 \end{array} \right. \quad (1)
 \end{aligned}$$

According to Equation 1, KSM_t indicates employees' knowledge sharing motives in t period, KSB_{t-1} means individual's expected knowledge sharing benefits in $t-1$ period, KSC_{t-1} refers to employees' expected knowledge sharing costs in $t-1$ period, KSM_{t-1} demonstrates employees' knowledge sharing motives in $t-1$ period, and POD stands for the process-orientation degree of OC. All the functions in Equation 1, namely F_1 , F_2 , f_1 , f_2 ,

and f_3 are all monotone-increasing functions. Therefore, according to the theoretical analysis and literature review, the research framework is proposed as Figure 1.

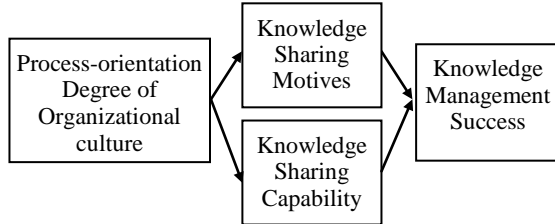


Figure 1. Research Framework: Conceptual Model

According to Figure 1, compared with result-orientated OC, the OC with higher process-orientation degree (POD) will improve KMS in the following two aspects, one is to improve KMS by enhancing employees' knowledge sharing motives, and the two is to improve KMS by feeding employees knowledge sharing capability.

H1: POD is positively related with knowledge sharing motives.

H2: POD is positively related with knowledge sharing capability.

H3: Knowledge sharing motives are positively related with KMS.

H4: Knowledge sharing capability is positively related with KMS.

H5: Knowledge sharing motives can mediate the relationship between POD and KMS.

H6: Knowledge sharing capability can mediate the relationship between POD and KMS.

In order to test the model, the authors will analyze the influencing mechanism in Figure 1 logically. Based on the qualitative analysis results, the authors will try to test the views in the model with simulating survey data. Due to the relative small sample size and short survey period, till today the data may be not very strong in statistics. So this paper will pay heavier attention to the theoretical analysis, while less attention is left for simulating empirical test since the data process methods will be very simple. For the sake of the data analysis in the following parts, it is needed for us to demonstrate our data collection process.

Variables measurement is designed as follows. There will be four main research variables, respectively process-orientation degree of OC (POD), knowledge sharing motives (KSM), knowledge sharing capability (KSC), and

knowledge management success (KMS). According to the existing literature, combining the method of brainstorming process, the specific measuring items will be proposed and the expected results are shown in Table 1.

Table 1. Expected Measuring Items of Main Research Variables

Variables	Items	Factor-load	Reliability (Cronbach's α)
POD	Behavior and process evaluation are focused in my firm.	.79	.68
	Mistakes due to trying new methods will not be punished.	.77	
	Cooperation behavior will be observed, recorded and rewarded.	.78	
KSM	I would like to teach my own know-how to others.	.85	.79
	I believe the others will support my requirements in knowledge.	.85	
	New employees will become more cooperative than before they joined the firm.	.80	
KSC	I can teach my own knowledge to others clearly and completely.	.57	.66
	Most of my coworkers can communicate their knowledge with others well.	.85	
	New employees will become more capable of teaching knowledge to others than before they joined the firm.	.86	
KMS	KM activities are beneficial to firm profits.	.73	.69
	KM activities are working well than most other firms.	.75	
	If KM activities stopped, the firm would cost much.	.84	

Simulating sample and data will be designed as follows. In view of the difficulty in survey concerning managerial discretion and investigated companies' reluctance in answering questions for the confidentiality with reference to their feeling data, this study will be particularly dedicated to these facets (1) to confine the questionnaire to one page, facilitating the interviewed persons to complete all the questions within 10 minutes with fewer resistance; (2) to extend the time for questionnaire investigation as far as possible; (3) to diversify means to do the investigation of

questionnaires: via E-mail, directly interviewing enterprises, investigating MBA learners, and by online contact. Note that the three latter modes will sponge on formal or informal relationships to the great extent except direct e-mails to an enterprise. We will get at least 200 effective samples and employ SPSS17.0 to process data. The expected descriptive statistics and normal test are presented on Table 2.

Table 2. Expected Descriptive Statistics And Normal Test (Kolmogorov-Smirnov)

	POD	KSC	KSM	KMS
N	200	200	200	200
Normal Parameters	3.377	2.988	2.476	3.114
Mean				
Maximum	5	5	5	5
Minimum	1	1	1	1
Std. Deviation	.997	.811	1.166	1.060
Kolmogorov-Smirnov	2.603	3.462	1.974	3.673
Asymp. Sig. (2-tailed)	.000	.000	.001	.000

4. RESULTS

First, according to the simulating survey data above, the correlation coefficient between POD and knowledge sharing motives (KSM) will be provided in Table 3. In Table 3, the quasi-empirical test results show that there should be a significant relationship (0.469, P=0.000) between the two which confirms the theoretical analysis conclusion to a good extent.

Table 3. Expected Correlation Coefficient (Pearson)

	POD	KSM
POD	1	.469 ^{**} (.000)
KSM	.469 ^{**} (.000)	1

Note: ^{**} donates significance at 0.01 level (N=200)

In order to further make sure the positive relationship between POD and KSM, we can try to split the sample into two sub-samples according to the level of POD, respectively named sub-sample with higher POD and sub-sample with lower POD, and then compare the means of KSM between the two by adopting the method of independent sample T-test. The result will be shown in Table 4, in which the difference of KSM between the two sub-samples with different PODs is significant. Consequently, the quasi-empirical test proves the above theoretical analysis result between POD and KSM. So, H1 holds.

Table 4. Expected Results Of Compare Means

	Levene Test	T Test of Mean Equation					
		Sig.	Sig	Mean	N	95% Confidence Level	
						Lower	Upper
KSM	Variance assumed equal	0.08	.00	1.9	100	-1.27	-.68
	Variance assumed not equal		.00	2.9	100	-1.27	-.68

Note: Grouping variable is POD.

Second, according to the simulating data, the correlation coefficient between POD and KSC is provided in Table 5. In Table 5, the quasi-empirical test result shows that there should be a significant relationship (0.627, P=0.000) between the two which confirms the theoretical analysis conclusion to a good extent.

Table 5. Expected Correlation Coefficient (Pearson)

	POD	KSM
POD	1	.627 ^{**} (.000)
KSC	.627 ^{**} (.000)	1

Note: ^{**} donates significance at 0.01 level (N=200)

Table 6. Expected Results Of Compare Means

	Levene Test	T Test of Mean Equation					
		Sig.	Sig	Mean	N	95% Confidence Level	
						Lower	Upper
KSC	Variance assumed equal	.017	.00	2.5	100	.84	1.26
	Variance assumed not equal		.00	3.4	100	.84	1.26

Note: Grouping variable is POD.

Aiming to further make sure the positive relationship between POD and KSC, we can try to compare the means of KSC between the two sub-samples with different POD levels by adopting the method of independent sample T-test. The result will be shown in Table 6, in which the difference in KSC between the two sub-samples with different PODs is significant. That is to say, the quasi-empirical test proves that process-orientated OC positively improves employees' knowledge sharing capability. H2 holds.

Third, according to the data above, the correlation coefficient between KSM and KMS will be provided in Table 7. In Table 7, the quasi-



empirical test result shows that there should be a significant relationship (0.650, P=0.000) between the two which confirms the theoretical analysis conclusion to a good degree.

Table 7. Expected Correlation Coefficient (Pearson)

	KSM	KMS
KSM	1	.650** (.000)
KMS	.650** (.000)	1

Note: ** donates significance at 0.01 level (N=200)

In order to further test the positive relationship between KSM and KMS, we can try to split the sample into two sub-samples according to the level of KSM, respectively sub-sample with higher KSM and sub-sample with lower KSM, and then compare the means of KMS between the two by adopting the method of independent sample T-test. The result will be shown in Table 8, in which the difference in KMS between the two sub-samples with different KSMs is significant. That is to say, the quasi-empirical test proves the above theoretical analysis result between KSM and KMS. H3 holds.

Table 8. Expected Results Of Compare Means

	Levene Test	T Test of Mean Equation				
	Sig.	Sig	Me an	N	95% Confidence Level	
					Low er	Upper
KMS Variance assumed equal	.001	.00	2.7	100	.808	1.16
KMS Variance assumed not equal		.00	3.8	100	.807	1.17

Note: Grouping variable is KSM.

Fourth, according to the data above, the correlation coefficient between and knowledge sharing capability (KSC) and KMS is provided in Table 9. In Table 9, the quasi-empirical test result show that there should be a significant relationship (0.629, P=0.000) between the two which confirms the theoretical analysis conclusion to good extent.

Table 9. Expected Correlation Coefficient (Pearson)

	KSC	KMS
KSC	1	.629** (.000)
KMS	.629** (.000)	1

Note: ** donates significance at 0.01 level (N=200)

In order to further make sure the positive relationship between KSC and KMS, we can try to split the sample into two sub-samples according to the level of KSC, respectively named sub-sample with higher KSC and sub-sample with lower KSC, and then compare the means of KMS between the

two by adopting the method of independent sample T-test. The result is shown in Table 10, in which the difference in KMS between the two sub-samples with different KSCs is significant. Therefore, the quasi-empirical test proves the above theoretical analysis result between KSC and KMS. H4 holds.

Table 10. Expected Results Of Compare Means

	Levene Test	T Test of Mean Equation				
	Sig.	Sig	Me an	N	95% Confidence Level	
					Low er	Upper
KMS Variance assumed equal	.006	.00	2.8	100	.800	1.06
KMS Variance assumed not equal		.00	3.6	100	.799	1.07

Note: Grouping variable is KSC.

Fifth, a hierarchical regression analysis among POD, KSM and KMS should be implemented. Step 1, taking POD as the predictor variable and KMS as the outcome variable, the regression equation will be carried out; Step 2, taking POD, KSM as the predictor variables and KMS as the outcome variable, the regression equation will be carried out; Step 3, taking POD, KSM, POD*KSM as the predictor variables and KMS as the outcome variable, the regression analysis will be performed. Due to the limitation of paper length, the detailed results in the form of Tables will be omitted. Step 1 shows that the coefficient of POD is significant (P=.000), step 2 shows that the coefficients of POD (P=.000) and KSM (P=.000) are both significant, and step 3 shows that the coefficient of POD (P=.075) is not significant any more, while the coefficients of KSM (P=.025) and POD*KSM (P=.012) are significant. The results shall show that the mediating role of KSM in the relationship between POD and KMS is significant. H5 holds.

Sixth, a hierarchical regression among POD, KSC and KMS should be implemented. Step 1, taking POD as the independent variable and KMS as the dependent variable, the regression analysis is carried out; Step 2, taking POD, KSC as the independent variables and KMS as the dependent variable, the regression analysis is carried out; Step 3, taking POD, KSC, POD*KSC as the independent variables and KMS as the dependent variable, the regression equation is carried out. Due to the limitation of paper length, the detailed results in the form of Tables are omitted. Step 1 will show that the coefficient of POD is significant (P=.000), step 2 will show that the coefficients of POD (P=.000) and KSC (P=.000) are both significant, and step 3

shows that the coefficient of POD ($P=.052$) is not significant any more, while the coefficients of KSC ($P=.035$) and $POD*KSC$ ($P=.000$) are significant. The results will show that the mediating role of KSC in the relationship between POD and KMS is significant. So, H_6 holds.

5. DISCUSSION

The most important contribution of this paper is that process-orientation degree of OC can improve KMS by positively affecting employees' motives and capability of knowledge sharing, which can both mediate the relationship between process-orientation degree of OC and KMS, but the mediating effect of capability is much higher than that of motives. The reasons and mechanisms why the relationship among process-orientation degree of OC, knowledge sharing and KMS holds will be discussed in detail as follows.

First, effective knowledge sharing will not occur automatically and there are many inherent obstacles for knowledge sharing [21]. Being afraid of competitive edge loss due to unlimited or unrecognized knowledge sharing is quite common. In general, the core competency of employees in knowledge economy times derives from their unique and specialized knowledge, which are the basis for employees to sustain their irreplaceable roles in the enterprises. In brief, knowledge is power which can determine its owners' position, prestige and treatment. The ancient Chinese sages, "Teaching prentices everything means losing your bread and butter", has taken strong root in the hearts of most of Chinese people. Therefore, it is very difficult for Chinese employees to openly share their private knowledge with others, especially the staff who potentially compete with themselves. For Chinese employees, information technology cannot assure that special knowledge sharing occurs automatically and employees have motivation for special knowledge sharing [21]. Therefore, it is necessary to give employees some incentives, in order to encourage employees to share special knowledge voluntarily. The fear of losing competitive advantage can be resolved in two ways: The first is to emphasize reciprocity. If both sides of knowledge sharing can share knowledge bidirectionally, then the employees involved can grow up together and consequently the loss of competitive loss will be weakened greatly. The building of reciprocity needs interpersonal trust, while process-orientated OC underlines cooperation sense and collaborative behavior which are just the core elements of establishing interpersonal trust.

Therefore, the building of reciprocity in nature requires process-orientated OC as the precondition in order to weaken the fear of knowledge sharing; The second for employees is to enhance continuous learning in order to improve their own knowledge storage which is the radical way to eliminate employees' fear on the disappearance of their competitive edge. According to the related literature, the enhancement of learning motives mostly derives from the official recognition and encouragement by the enterprises policies system on the learning process and learning behavior [22], while such recognition only can come from process-orientated OC.

Case study for first reason: Microsoft, which is called as "the biggest brain press in the world", is in nature a good example for inducing employees to search, teach and share good knowledge with great enthusiasm and interest by fostering a good process-orientation OC. In order to make the knowledge elites cooperate with each other and share their knowledge with higher efficiency, Microsoft has spent much time and energy in constructing a set of agile "knowledge map", which has been marked as one of the best practices among all the existing KM systems. In the knowledge map of Microsoft, the critical knowledge and its owner will be described and located clearly, and the common employees are of great enthusiasm in searching knowledge by referring to the knowledge map, since such behavior will be recorded and prized; Not only that, they are also of great interests in putting their private knowledge in the knowledge map for helping others, since such behavior will be prized heavily and the employees themselves will be honored by the coworkers in the process-orientated atmosphere of Microsoft, which is the most great incentives for such knowledge workers.

Second, knowledge sharing is a time consuming and energy demanding process [23]. No matter the action of codifying and sending their own knowledge as the knowledge senders, or the behavior of receiving and decoding the transferred knowledge as the knowledge receivers, both require the employees to devote themselves with much effort, which will even directly affect the current results of their work negatively. Therefore, only when employees' knowledge sharing behavior is approved and prized by the formal institutions of the firm, can the knowledge sharing motives be improved. In a result-orientated OC, the performance evaluation of employees completely depends on job results, while the procedural elements, such as how much the employees transfer



knowledge to others or what kind of support and contribution they provide for others, are not considered by the evaluation system. In this case, the necessary knowledge and skills to accomplish tasks are really becoming the signals of individual power. Consequently, no one employee would like to share his or her own work know-how with others, nor will he or she devote more effort into the cooperation and support behavior in teamwork; On the contrary, in a process-orientated OC, whether or not employees can initiate or take part in knowledge sharing activities actively, and further whether or not they can implement effective business collaboration by supporting the others in accomplishing their jobs, will become the direct basis and even basic constitutes of their individual evaluation results. Consequently, the focus and reward of the knowledge sharing behavior and attitudes can be realized by formal institutions of an enterprise. It is worthy of pointing out that the observation, recording and evaluation of knowledge sharing behavior is up to knowledge sharing visibility [24], which originates from the definition of task visibility and can be defined as the extent to which employees' knowledge sharing behavior can be identified and monitored by other participants. Therefore, even in a process-orientated OC, the good measures of improving employees' knowledge sharing motives should be the ones trying best to enhance knowledge sharing visibility.

Case study for reason 2: CSC Company. CSC, a famous IT company located in Virginia, is a good example who can make good use of process-orientated culture in improving knowledge sharing. In CSC, as an important competitor as well as a strategic partner of Microsoft, there is a specialized knowledge-expert team which is constructed aiming to satisfying both the common interests of the experts and the increasing demanding of knowledge sharing of the common staff. All the common employees are very like to communicate with the knowledge-expert team members when they search for new experience and originality. Besides the day-to-day informal communication, the knowledge team bears a fixed responsibility of coaching, consulting and training the other employees. In order to make sure the experts have the motives to share their specialized knowledge to others, the culture in CSC emphasizes the procedural elements when it comes to appraise the experts' performance. In CSC, each expert will be evaluated to a great part according to the quantity and quality of their knowledge sharing behavior which is mostly up to the feedback of the common employees. The reward of knowledge sharing includes bonus,

promotion and honor. In general, CSC company has built such a process-orientated culture to encourage and reward knowledge cooperation, which is in shortage for many knowledge sharing programs.

Third, process-orientation culture is helpful to improve the employees' motives of finding and recording new knowledge during work process. With the process of business operation and employee's job implementation, huge new knowledge will be produced. The identification, sharing and acquisition methods of such new knowledge can be called as endogenous knowledge sharing mode. The firms should encourage and develop such endogenous knowledge sharing and acquisition mode with great efforts. The reason is that new knowledge produced in work process is the most valuable knowledge for carrying out specific business and work inside the firms, since the new knowledge is born directly from the practice. Process-orientated OC often emphasizes the middle results and specific links, while the new knowledge produced in work process is precisely the important middle results. Therefore, in such culture, the requirements of very strict observation and recording are very helpful to the identification, sharing and acquisition of new knowledge, since it is a procedural evaluation criteria for employees' performance.

Case study for reason 3: Intel. As this point, Intel is a good example of encouraging new knowledge sharing and application by building a risk-taking culture. Specifically speaking, in Intel, not only the reward system for successful knowledge sharing and application is emphasized, but the tolerance system for the failure of knowledge sharing and application is implemented. Intel proposes that managers should have a suitable tolerance on bearing mistakes in knowledge sharing and application practice. Employees know that the firm can accept their possible failure without any negative evaluation and punishments, so they dare to implement knowledge sharing and application. In order to make the risk-taking behavior more viable, Intel will collect both the performance and behavior in knowledge sharing in detail, which will be regarded as the basis of evaluation and prize. Intel emphasizes that once an employee has a new attempt in knowledge sharing and application, called as the predictable risk-taking, he or she must try to understand the environment, the new objectives, and the predictable challenges of knowledge sharing and application behavior, and then prepare carefully for such behavior. Next, he or she should communicate with the direct boss and



coworkers by expressing such a fact that the new coming knowledge sharing and application behavior is not carried out for his or her own interests, but for the company, in order to seek for the recognition of the boss and team members. When the culture is process-orientated and the employees' risk-behavior is systemized in a good process, all team members and the boss will stand with the sponsors of knowledge sharing and application, and such behavior can be called good risk-taking.

The last but not the least, process-orientated OC is good to enhance the employees' capability of knowledge sharing. The so-called "capability of knowledge sharing" really means "meta-knowledge" of sharing knowledge, which is essentially implicit. Such a fact determines that the capability of knowledge sharing can not be taught quickly, instead, the only way to hold such meta-knowledge is continuous practice and long term face-to-face communication. For continuous practice, without question, it is full of failure risk. If the formal performance evaluation system cannot respect the efforts of applying the meta-knowledge and further provide them enough supports, instead the enterprise managers only pay attention to the costs of trial and error and even punish them, then the practice of applying meta-knowledge can not insist for a long time; For long-term face-to-face communication among employees, not surprisingly, it is more popular in an atmosphere of good interpersonal trust and cooperation [25]. According to a large sum of literature, good interpersonal trust and cooperation is more popular in an OC with high process-orientated degree. Therefore, process-orientated OC can effectively improve KMS probability by enhancing employees' capability of knowledge sharing.

6. CONCLUSIONS

KMS needs to pay attention to the inner spirit of KM. If the firms only imitate and transplant the experiences and methods of the competitors, what can be learned are limited to the explicit behavior features, while the important ideas, values and intangible assets with real meanings can not be imitated, and of course KMS will not be reached at all. Therefore, when firms implement KM projects, the first important thing is to push the OC change. OC is a combination of all potential beliefs, expectations, unwritten norms, and customs, which cannot be described with language, but can affect the communication and behavior modes of all employees in KM process. In fact, OC is a double-

edge sword, in one side, process-orientated culture can provide good foundation for coordinated knowledge innovation and effective KM, in the other side, result-orientated culture can be the obstacles of KM.

There are many studies on the relationship between OC and KMS, however, the relationship between process-orientation dimension of OC and KMS has not been specialized demonstrated, though KM itself is process-orientated in nature. Furthermore, the existing literature has not explored the black-box of the relationship between OC and KMS by inducing the right mediating variables. Based on the above literature rethink, the paper tries to introduce knowledge sharing as the mediating variable in order to specialize in the relationship between process-orientation dimension of OC and KMS under the traditional Chinese culture background. By adopting the methods of logical reasoning and literature review, the paper proposes a conceptual model to analyze the influence mechanism of process-orientation dimension of OC on KMS. Both theoretical analysis results, which are derived from the conceptual model, and simulated quasi-empirical test results, which are reached by employing methods of correlation analysis and mean comparison, show that process-orientated OC can meet the basic requirements of KMS by positively affecting the critical links, namely knowledge sharing. The underlying mechanism is that process-orientated OC can improve the employees' motives and capability of taking part in knowledge sharing activities and further improve KMS. When firms carry out KM projects, it is the most important thing to shape process-orientated OC.

KM itself is process-orientated in nature, which is composed of many specific sub-processes and links, of which knowledge sharing is the most critical and difficult link in the background of Chinese culture. The theoretical analysis and quasi-empirical test results show that process-orientated OC can meet the basic requirements of KMS by positively affecting the critical link, i.e. knowledge sharing. The hidden mechanism is that process-orientated OC can improve the employees' motives and capability of taking part in knowledge sharing activities and further stimulate KMS. All the policies and countermeasures that can improve KM effectiveness must be process-orientated, which means they emphasize processes more than results, pay more attention to what the employees do and how the employees do in knowledge sharing activities instead of only focusing on the final

results of the employees. Only then KMS can be supported effectively by OC. However, it is needed to point out that process-orientation must be in a moderate degree. Otherwise, the bad results in KM will appear. In one side, the focus on process can not replace the attention on the final results; in the other hand, the way of paying attention should not depend on judicially enforced rules, instead, the firm should stimulate the employees' inner motives and capability of sharing knowledge during work practice by the way of observing, advocating, helping and feedback. If the culture only focuses on results, the targeted conclusions and improvements in knowledge sharing activities can not be reached.

Therefore, in order to seek for KMS when firms implement KM projects, they should be good at building a strong process-orientated OC suitable for KM by appropriate management system and action plans. Of course, the other influencing factors, such as the support from senior managers, the infrastructure of KM, the knowledge itself and the employees themselves, can not be ignored, since the KMS needs the matching degree among all the critical factors. Due to paper length, there are many other related issues are not explored in detail which need further deep discussion and strict empirical test with large-scaled sample and good statistical methods. For example, how the interaction among process-orientation and the other dimensions of OC affects KMS is especially worthy of further studying with heavy energy investment.

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