

# THE ROLE OF KNOWLEDGE MANAGEMENT PRACTICES ON ORGANIZATIONAL CONTEXT AND ORGANIZATIONAL EFFECTIVENESS

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## Abstract

Knowledge Management is a difficult concept: it contains multiple representations and concepts. It is believed to have impact on organizational performance and organizational effectiveness. This research attempts to explore the influence of organizational, cultural, and structural characteristics on the extent of knowledge management practices and organizational effectiveness. A study of selected multinational companies in Malaysia was conducted using 98 questionnaires. Six main hypotheses have been generated and Statistical Package for Social Science (SPSS) software was used for analyze the relationships of organizational context, KM practices, and organizational effectiveness. The result indicates that out of 5 elements in the organizational context, support and collaboration, leadership commitment and formalization have relationships with knowledge management practices. However, Knowledge management practices partially mediate the relationship between organizational context and organizational effectiveness.

## INTRODUCTION

The management of the intellectual capital of the organization has become increasingly important in the knowledge-based society today. Both commercial and public organizations recognize the significance of being an effective learning organi-

zation. There is a growing need for individuals who have the appropriate training and experience in the Knowledge Management function. Knowledge Management (KM) related to the “Strategies and processes of identifying, capturing and leveraging knowledge help the firm to compete in this turbulent business environment.” (American

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Productivity and Quality Centre, 1997) Effective management of organizational knowledge is believed to be linked with competitive advantage and is considered critical to the success of an organization (Nonaka, 1994; Spender and Grant, 1996). Managers have begun to focus their organizations on becoming learning organizations, implementing KM tools and measuring intellectual capital (Rollo, 2002). For many years, owners of family businesses have passed their commercial knowledge to their children, craftsmen have taught their trade to apprentices; workers have shared and exchange their ideas and know-how on the job. It was not until the 1990s that Chief Executives started talking about KM. It is believed that KM has evolved out of an amalgamation of concepts borrowed from Artificial Intelligence (AI), Business Process Reengineering (BRP), Human Resource Management (HRM) and Organizational Behavior (OB) fields (Liebowitz and Beckman, 1998). The concept of knowledge are traditionally in the area of epistemology (the Philosophical study of the nature of knowledge and how it is created) where Polanyi is a major contributor to it (Sveiby, 1997). However, more recently, computer science, cognitive psychology, information technology, social research and brain research have also contributed to this field.

## **LITERATURE REVIEW**

Knowledge management covers a broad range of issues leading to misinterpretation by most organizations. There are many opinions of KM: some refer to it as an emerging discipline (Harris, Bair and Stear, 1998) whereas others argue that it evolves from expert systems and artificial intelligence (O'Dell et al., 1998; Huynh, 1999). Some management theory researchers feel that knowledge is based on individual and organizational competencies such as skills, know-how and know-what (Nonaka and Takeuchi 1995; Dav-

enport and Prusak, 1998).

O'Dell and Grayson (1998) defines Knowledge management as a conscious strategy of getting the right knowledge to the right people at the right time and helping people share and put information into action in ways that will strive to improve organizational performance. Whereas Beckman (1997) refers to KM as formalization of and access to, experience, knowledge and expertise that create new capabilities, enable superior performance, encourage innovation and enhance customer value. According to Newman (1991) intellectual assets are the valuable knowledge available to be used to exploitation - must be nurtured, preserved and used to the largest extent possible by both individuals and organizations. According to Armbrecht et al. (2001), a company's culture and structure will be the critical factors enabling knowledge flow whereas Quintas et al., (1997) suggest that human resources, processes and IT are critical to KM. Holsapple and Joshi (2000), on the other hand, highlighted a range of factors that can influence the success of KM initiatives, which include: culture (Leonard, 1995; Szulanski, 1996), technology (Anderson, 1996), leadership (Anderson, 1996), organizational adjustments (Szulanski, 1996) and employee motivation ((Szulanski, 1996). Skyrme (1998) has also identified several critical factors to KM, which include knowledge leadership, knowledge creating and sharing culture, continuous learning, well developed ICT infrastructure and systematic organizational knowledge processes.

The existence of a supportive culture in an organization is vital in developing the association between the knowledge capabilities and the business strategy (Pentland, 1995). Putting KM into action, cultural renovation is required as the organization's ability to publicize KM concept and its advantages to the members are critical for effective KM. On the other hand, the nature of the knowledge systems underlying economic activities is currently forcing many organizations to al-

ter both their own knowledge systems and the administrative structures to manage them (Jonas, 2000). The conceptualization of the firm as a knowledge integrating institution implies the importance of the internal structure of the firm, especially in terms of the hierarchy and the location of decision making (Grant, 1996). That is why Galagan (1997) posits that KM is a transformation of the employees' knowledge into a manageable asset, which includes reshaping the organizational structure and culture.

## RESEARCH MODEL

The literature review has indicated some factors that drive KM initiatives in the organization. There is a lack of systematic study in Malaysian context, especially multinational manufacturing companies. KM is still in its early stages and the contribution of knowledge management practices is still a debatable issue. The aim of this research is to examine the relationship between organizational context, knowledge management practices and organizational effectiveness. As stated in the literature review, studies have emphasized on the role of organizational culture, and structure in KM practices/ processes (i.e. acquisition, and sharing) and organizational effectiveness. Cultural properties are shared and maintained by the members of an organization whereas structural prop-

erties are objective aspects of an organization that cannot be deduced.

The research model is as shown in Figure 1 below.

## Hypotheses Development

Organizational context is investigated as the independent variable, which is looked in terms of cultural and structural dimensions. For organizational culture, three dimensions were formulated to measure cultural characteristics. These are support and collaboration, learning and development as well as leadership commitment.

### 1. *Support and Collaboration*

Support and collaboration refers to the extent to which people in an organization actively support and assist each other in work related matters. This includes moral support from superiors, peers, subordinates and work groups in performing operational tasks. Support and collaboration is also a measurement of teamwork. Through support and collaboration, ideas are shared and channeled cross-functionally as well as inter-organizationally. Hence, we hypothesize that:

H1 - Support and collaboration has positive relationship with knowledge management practices.

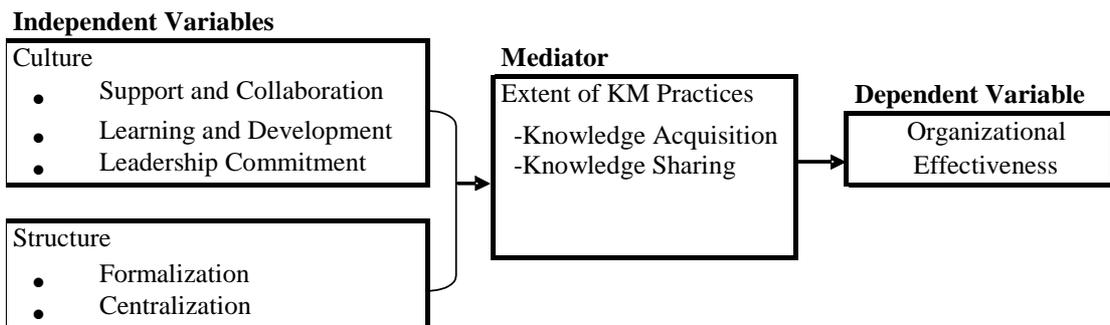


Figure 1: Research Model

## 2. *Learning and Development*

Learning and development is associated with the degree to which formal and informal training, learning and development activities are encouraged in the organization. It is important to develop employees for further growth and advancement in career in order to maintain the pool of knowledge within the organization. This will shorten the learning curve of new employees. With the development of organizational workforce, knowledge that is learned and applied will make knowledge management practices prevail. We, therefore, hypothesize that:

H2 - Learning and development has positive relationship with knowledge management practices.

## 3. *Leadership Commitment*

Managers' commitment, attention, and consistency of purpose are essential in developing the desired behaviours and value systems using motivation and reward. Managers need to provide the necessary resources and create a work setting and a supportive climate to allow subordinates to experiment, explore and try out new work processes and practices. In order for new knowledge generation to take place, managers must have high-risk tolerance and be prepared to accept failures since every innovative change carries with it the possibility of failure. Management can signal the importance of KM practices by rewarding those who inculcate these in either monetary or non-monetary form as well as reformulate policies that obstruct KM. Thus, we hypothesize that:

H3 - Leadership commitment has positive relationship with knowledge management practices.

In organizational context two dimensions have been formulated to measure structural characteristics, such as formalization and centralization.

## 4. *Formalization*

Organization that is less formal in its structure will tend to provide better communication with

employees and business partners. This creates greater flexibility and creativity, which is conducive for KM. Conversely; the employees operating within formal structures tend to be cautious and conservative. The existence of clear-cut goals in bureaucratic organizational settings might dampen the discussion of new ideas that is essential for effective KM. Hence, we hypothesize that:

H4 - Formalization has negative relationship with knowledge management practices.

## 5. *Centralization*

Centralization is defined as the extent to which decision-making is concentrated at the highest level in the organization (Robbins, 1996). Centralization is often related to bureaucracy. Ekvall, Arvonem and Nystrom (1987) conclude that bureaucratic organization structures restrain internal knowledge dissemination due to the hierarchical, complicated and time-consuming communication channels. Decentralization related to the delegation of authority throughout the organization where it involves all levels of employee's participation in the decision-making processes. According to McGinnis and Ackelsberg (1983), decentralization provides channel for open and frequent communication as well as a tendency to focus on results rather than turf. This will help to enhance KM practices. We, therefore, hypothesize that:

H5 - Centralization has negative relationship with knowledge management practices.

## **Mediator - Knowledge Management Practices**

Organizations can realize the full value of their knowledge assets only when they can effectively manage KM processes or practices. Hence, in our research we measure KM practices by measuring the extent of knowledge acquisition and knowledge sharing.

Acquisition process is also termed as creation, capturing, innovation, seeking, generation and collaboration. It is mainly about the creation of new knowledge through developing new ideas, the recognition of new patterns, the synthesis of separate disciplines as well as the development of new products and processes. Knowledge acquisition is an emergent process in which motivation; inspiration, experimentation and pure chance play important roles (Lynn, Morone and Paulson, 1996). Organizations need to acquire knowledge about suppliers, customers, new products and services, and also about their competitors within industry to generate new knowledge, new ideas and new strategies for process improvement, product improvement, customer improvement and also able to benchmark the performance in order to fight and compete the business world. Hence, there is a relationship within organizational context and knowledge acquisition.

On the other hand, the knowledge sharing process enables the flow of knowledge among and between individuals, groups and organizations. The heart of knowledge is a community of shared ideas (Lang, 2001). Knowledge is always increased and expands with sharing. Therefore, organizations need to have a good process on knowledge sharing in order to make knowledge effective. Knowledge needs to be exchanged, distributed and made accessible to relevant stakeholders. There is also a need to make individuals feel the need to share with those who need them in order to increase the performance of the organization. Hence, there is a relationship within organizational context and knowledge sharing. KM is a process that helps organizations to find, select, organize, disseminate, and transfer important information and expertise necessary for activities such as problem solving, decision-making and strategic planning to ensure organization effectiveness. Therefore, it will also act as a mediator between organizational context and organizational effectiveness. Based on the above discussion, we hypothesize that:

H6 -The relationship between organizational context and organizational effectiveness is mediated by Knowledge Management Practices.

## **RESEARCH METHODOLOGY**

This paper seeks to examine the relationship between cultural characteristics and structural characteristics (as independent variables) with the extent of KM practices (as mediator) and organization effectiveness (as dependent variable). Questionnaires were used to collect from the respondents. The questionnaires were distributed through post and e-mails to targeted organizations as well as distributed personally to encourage cooperation from the respondents. The respondents were given four weeks to complete the questionnaires. One hundred and fifty questionnaires were distributed to 20 multinational manufacturing companies in Malaysia. A total of 98 were returned. Hence, the response rate was 66%.

## **RESULTS**

Of the 98 respondents 4.1% were top level manager, 24.5% were middle level and managers, 31.6% were lower level managers and 39.8% were belonged to other job positions. 9.2% of the respondents in the job position were less than a year, 28.6% of the respondents in the position were between 1 to 2 years, 31.6% respondent in the position were between 3 to 5 years, 18.4% of respondent in the position were between 6 to 10 years and 12.2% of the respondent in the position represented the ages between 11 to 20. 66.3% of the respondents' companies had more than one thousand employees, 4.1% between 501 to 1,000 employees, 8.2% between 151 to 500 employees while another 13.3% between 50 to 150 employees. The remaining 8.2% respondents had less than 50 employees. The respondents also responded on the group in their organization in-

charge of knowledge management practices. 44.9% of the organizational knowledge management practices were carried out by Human Resources. Only 2.0% responded that knowledge management practices were carried out by Information Technology. 29.6% responded that KM was conducted by Knowledge Management Unit/ Training Department and the remaining 23.5% responded that other groups in their organization carries out KM practices.

Table 1 shows the reliability assessments for the independent, mediating and dependent variables. To assess the internal consistency and stability of data, the reliability analysis shows the degree to which the items in each set correlate with one another. Cronbach's Alpha was used to establish this inter-item consistency. Since the

Cronbach Alpha coefficients are all above 0.5 (Nunnally 1978), it can be concluded that the measures are reliable for further analysis.

Regression analysis was carried out to test the relationship between the dimensions of organizational culture and structure to each dimension in knowledge management practices (i.e., knowledge acquisition, and knowledge sharing). In this research, a significance level of 0.05 or 5% significance level is used as a basis for accepting or rejecting the hypotheses.

The first regression model involved organizational culture and organizational structure as independent variable and knowledge management practices (i.e., knowledge acquisition) as the dependent variable. This can be seen in Table 2. From the regression table, the coefficient of R<sup>2</sup> is

**Table 1: Summary of Reliability Analysis**

Variables	Number of items	Cronbach Alpha
Support and Collaboration	5	.8645
Learning and Development	5	.8875
Leadership Commitment	6	.8240
Formalization	4	.5434
Centralization	5	.9321
Knowledge Acquisition	7	.9270
Knowledge Sharing	6	.8590
Organizational Effectiveness	11	.9466

**Table 2: Summary of Regression Output**

Variables	Beta	Sig.
Support and Collaboration	.354	<b>.003</b>
Learning and Development	-.108	.433
Leadership Commitment	.458	<b>.004</b>
Formalization	.103	.205
Centralization	.060	.473
R <sup>2</sup>	.515	
F-value	19.55	
Durbin-Watson	2.22	

0.515 indicating that the independent variables account for 51.5% of the variance in knowledge acquisition. Durbin Watson of 2.226 indicates that there is no auto-correlation problem. Tolerance and VIF values falls within the acceptable range for all independent variables indicating that there is no multicollinearity problem present in this model.

The findings of the coefficient matrix show that learning and development (0.433), formalization (0.205) and centralization (0.473) are not related to knowledge acquisition. On the other hand, support and collaboration (0.003) and leadership commitment (0.004) have significant impact on knowledge acquisition.

The second regression model involved organizational culture and organizational structure as independent variables and knowledge management practices (i.e., knowledge sharing) as dependent variable. Table 3 summarizes the results of the regression analysis.

From the summary of regression table, the coefficient  $R^2$  of 0.593 indicating that the independent variables account for 59.3% of the variance in knowledge sharing. Durbin Watson of 1.827 indicates there is no auto-correlation problem. Tolerance and VIF values within the accept-

able range for all independent variables indicate there are no multicollinearity problems. The finding of the coefficient matrix shows that support and collaboration (0.000), leadership commitment (0.022) and formalization (0.020) have impact on knowledge sharing, where as learning and development (0.938) and centralization (0.178) are not related to knowledge sharing.

In order to test the mediating effect of knowledge management practices, three steps were used to test this mediating effect as proposed by Baron and Kenny (1986). However, from regression results summarized in table 2 and 3, showed that support and collaboration, leadership commitment and formalization is related knowledge acquisition and knowledge sharing. But the regression analysis results confirm that support and collaboration is not related to organizational effectiveness. Therefore, the mediating effect of knowledge acquisition and knowledge sharing are tested between independent variables of leadership commitment and formalization and dependent variable organizational effectiveness. Table 4 summarizes the results of the mediating effect of knowledge acquisition on the relationship between leadership commitment and organizational effectiveness.

**Table 3: Summary of Regression Output**

<b>Variables</b>	<b>Beta</b>	<b>Sig.</b>
Support and Collaboration	.389	<b>.000</b>
Learning and Development	.010	.938
Leadership Commitment	.328	<b>.022</b>
Formalization	.175	<b>.020</b>
Centralization	.104	.178
$R^2$	.593	
F-value	26.75	
Durbin-Watson	1.87	

**Table 4: Mediating Effect of Knowledge Acquisition**

Dependent	Independent	Std Beta Step 1	Std Beta Step 2
Organizational Effectiveness	Leadership Commitment	.728**	.457**
	<b>Mediator</b> Knowledge Acquisition		.398**
	R <sup>2</sup>	.530	.615
	R <sup>2</sup> change	.530**	.085**
	F change	108.10**	21.044**

Note: \*\*p < .01

(Step 1 refers to regression with the independent variables of one dimension of organizational context; whilst Step 2 refers to regression with the mediating variable)

The R<sup>2</sup> change and F-change from step 1 to step 2 is statistically significant, indicating that knowledge acquisition influences the impact of leadership commitment on organizational effectiveness. The results also support that leadership commitment influences knowledge acquisition in step 1. In step 2 upon introduction of mediating variable, leadership commitment was found significant (.457\*\*). Furthermore, knowledge ac-

quisition was positively related with organizational effectiveness (.398\*\*). This confirms that knowledge acquisition mediates the relationship between leadership commitment and organizational effectiveness. Table 5 showed that the result of the mediating effect of knowledge sharing on the relationship between leadership commitment & formalization and organizational effectiveness.

**Table 5: Mediating Effect of Knowledge Sharing**

Dependent	Independent	Std Beta Step 1	Std Beta Step 2
Organizational Effectiveness	Leadership Commitment	.665**	.375**
	Formalization	.173**	.112**
	<b>Mediator</b> Knowledge Sharing		.437**
	R <sup>2</sup>	.556	.646
	R <sup>2</sup> change	.556**	.090**
	F change	59.42**	23.96**

Note: \*\*p < .01

(Step 1 refers to regression with the independent variables of one dimension of organizational context; whilst Step 2 refers to regression with the mediating variable)

The R<sup>2</sup> change and F-change from step 1 to step 2 is statistically significant, indicating that knowledge sharing influences the impact of leadership commitment and formalization on organizational effectiveness. The results also support that leadership commitment influences knowledge sharing in step 1. In step 2 upon introduction of mediating variable, leadership commitment was found significant (.375\*\*) and formalization also influences knowledge sharing in step 1. In step 2 upon introduction of mediating variable, formalization was also found to be significant (.112\*\*). Furthermore, knowledge sharing was positively related with organizational effectiveness (.437\*\*). This confirms that knowledge sharing mediates the relationship between organizational context and organizational effectiveness. Therefore, the hypothesis H6 as a mediating effect of knowledge management practices between organizational context and organizational effectiveness was accepted.

## **DISCUSSION OF THE FINDINGS**

The first hypothesis was tested on the relationship between organizational context and knowledge acquisition. It was believed that organizational context would have relationship with knowledge acquisition. The result showed that support and collaboration, and leadership commitment has relationship with knowledge acquisition. This finding was supported by previous researchers such as Kimberly (1976), Amabile, Conti, Coon, Lazenby and Herron (1996), Parker and Price (1994) with regards to the impotencies of support and collaboration, and leadership commitment to ensure the success of KM acquisition. Thus it shows that support and collaboration, and leadership commitment that develop and encourage employee on knowledge acquisition are important in the context of multinational manufacturing companies in Malaysia.

The second hypothesis tested on the relation-

ship of organizational context and knowledge sharing. Organizational culture and structure are found to have relationship with knowledge sharing under support and collaboration, leadership commitment and formalization. This finding is also supported by previous researchers as mentioned by Kimberly, (1976) and Amabile, Conti, Coon, Lazenby & Herron, (1996) that support and collaboration open interaction among employees. Bennis (1992) defines leadership as capacity to create social architecture and ability to influence others. Formalization refers as job task and responsibilities (Sciulli, 1998 and Robbins, 1996). It could facilitate the adoption and implementation of idea (Pierce and Delbecq, 1977). It indicates that organizations should focus on support and collaboration, leadership commitment and formalization enable knowledge sharing across organizations.

In summary, the findings showed that cultural dimension plays an important role in KM practices. This is consistent with Davenport et al. (1998) who posits that shaping culture is central in an organization's ability to manage its knowledge more effectively. Larson (1999) also insists that company's cultural environment must be considered before KM implementation. Of these cultural dimensions, both support and collaboration, leadership commitments led to higher levels of KM practices in general. The study also finds that structural dimension only affects KM practices on formalization. Menon and Varadarajan (1992) believe that formalization encourages KM practices while some perceive the other way round (Hage and Aiken, 1970, Kanter, 1983, Lovelace, 1986). Meanwhile, contingency scholars argue that there is no one most effective organizational structure that suits all situations (Jonas, 2000).

The final hypothesis was tested the mediating effect of knowledge management practices on the relationship between organizational context and organizational effectiveness. Results confirm that knowledge management practices are important for organizational effectiveness. Organizational

effectiveness will be achieved through knowledge management practices but organizational context will influence knowledge management practices. This finding is supported by the view of Gold et al., (2001) and Islam (2007) that organizational design is important for knowledge management practices that leads to organizational effectiveness.

## CONCLUSION

This research has explored the importance of the cultural and structural dimensions towards KM practices and organizational effectiveness. The researcher has also explored the dimensions of KM practices as a mediating effect between organizational context and organizational effectiveness. This study facilitated the identification of the KM initiatives with respect to KM practices. Many respondents claimed that support and collaboration, leadership commitment and formalization are critical to success of KM practices. Nevertheless, successful KM implementation also depended on the implementation process that is used as it is always not easy especially on new system implementation. In this current complex and global business environment, knowledge has become one of the most critical assets to organizations. Recent growth of the modern society proves that we have shifted from physical capital into the most intangible, elusive, mobile, and important assets of all, which is intellectual property. Knowledge is part of intellectual property since it supports organizations in their growth, innovations, and values. Hence, in today's world, it is definitely important for organizations to manage their knowledge well. Current organizations require more skillful and knowledgeable manpower; this requires KM at the grassroots to manage organizational knowledge resources. There is no formula that can fit all sizes or all type of organizations as it all depends on organizational strategy, business environment and other internal and external factors as well. This study has given

some worthy thoughts of how organizations should organize to manage the competitive knowledge to ensure organizational effectiveness. The finding shows that both culture and structural dimensions are important to the success of KM practices and organizational effectiveness. With good knowledge management driver in place, organizations are ensured of good knowledge which can capture and share information across the whole organization as a "best known method". Good knowledge management practice also enables companies to protect knowledge in order not to leak out their fruitful information outside the organization.

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