

Knowledge Management Adoption among Malaysia's SMEs: Critical Factors

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ABSTRACT

The value and importance of knowledge, as seen by numerous organisations today, does without a doubt play a crucial role in the current ever-challenging and aggressive business environment. As a result, businesses that aspire to be labelled as being successful and competitive need to seek and find better ways to improve their firms' performance. Hence, knowledge management (KM), which is viewed as a source of sustainable competitive advantage, has attracted the attention of various companies all over the business world, including small and medium enterprises (SMEs) in Malaysia. With the realisation of KM, the systematic management of organisation knowledge - a strategic corporate asset not to be taken lightly, can thus be created, transferred, shared, and utilised, in pushing for greater organisational competitiveness, innovativeness and, productivity. The study determines and examines the critical success factors (CSFs) of SMEs that further influences KM processes; knowledge creation, transfer, sharing, utilisation. The CSFs observed in this research; culture; leadership; employee participation; information and communications technology (ICT); organisational structure; are thoroughly investigated to explore on whether these factors have an impact on knowledge creation; knowledge transfer; knowledge sharing; and knowledge utilisation of KM processes among SMEs in Malaysia. The findings may be used as recommendations to SMEs that are keen in adopting KM in their daily operations. Furthermore, this study may also serve as a basis for future quantitative research studies among researchers, practitioners, and professionals alike, in gaining a profound understanding of KM in sectors other than SMEs.

Keywords

Knowledge management; Critical success factors; KM processes; Small and medium enterprises

1.0 INTRODUCTION

In today's business world, the perception and inclination of knowledge is gradually increasing. In this day and age, knowledge is viewed to be the most important organisational resource that carries unprecedented value and therefore should not be left unscrutinised as compared to conventional business assets, such as land, labour, and capital. As a consequence, knowledge together with change and globalisation has become the most important driving force and commercial asset of the 21st century economy. It is this so called 'knowledge' that has in fact become the emerging discipline popularly known as knowledge management (KM) (KLM, 2002). Firms, who are seen to have adopted KM, are undoubtedly reaping the continuous benefits of what KM has to offer. Such benefits include better decision making, faster response time, increased profit and, improved productivity (KPMG, 1998). As a result, a number of private and public organisations, attracted by the lucrative returns of what KM has to offer are therefore being lured and seemingly delighted in embracing and implementing KM. Subsequently, firms are now unknowingly grasping to the most important intangible asset vis-à-vis knowledge that will be fully managed and utilised just by plainly implementing KM (Sharifuddin, Ikhsan, & Rowlandb, 2007). Moreover, the effective management of organisational knowledge is believed to be linked with competitive advantage and hence considered critical to the success of an organisation (Nonaka, 1998).

Small and medium enterprises (SMEs) are often regarded as the backbone of industrial development and important source of growth in Malaysia economy. SMEs in Malaysia are divided into two distinct categories: 1) Manufacturing, Manufacturing-Related Services and Agro-based industries and 2) Services, Primary Agriculture and Information & Communication Technology (ICT) ("SME Corp Malaysia," 2009). According to National SME Development Council's Annual Report 2008, almost 99.2 percent of the total business establishments in Malaysia consisted of SMEs. It is also further revealed that the emergences

of these SMEs are in fact considered to be exceedingly pertinent in the new Malaysian economic model to transform Malaysia in becoming a high-income economy. As a result, the pursuit of this vibrant economy therefore requires strong momentum that comes from these SMEs, particularly local Malaysian SMEs (NSDC, 2008).

The current study aims to identify and examine the influence of CSFs; culture, leadership, employee participation, information and communications technology (ICT), organisational structure; on KM processes; knowledge creation, knowledge transfer, knowledge sharing, knowledge utilisation specifically in the SMEs industry. The findings of this study will be useful to SMEs, serving as a guideline to discover and to further observe the importance of above mentioned factors and KM processes within an organisation in achieving sustainable competitive advantage in SMEs with high value-added growth potential in Malaysia.

2.0 LITERATURE REVIEW

2.1 Knowledge and Knowledge Management (KM)

The term 'knowledge', in the views of Gao, Li, & Clarke (2008), is apparently consisting of data, information, intelligence, skill, experience, expertise, ideas, intuition, or insight - in the context in which it is used. However, Grey (2006) construed knowledge differently in terms of obtaining it through means of participation, practice, and apprenticeship. In this, Grey (2006) further elucidates that knowledge is a shared understanding not to be taken lightly by enterprises, which must be extracted, captured, and exchanged among their workers.

As often been mentioned, knowledge can be categorised into two types, which are explicit knowledge (EK) and tacit knowledge (TK) (Sanchez, 2004). Sanchez (2004) underlines EK as knowledge that is held by workers, in assisting the creation of new knowledge, and further utilising that knowledge in the development and growth of information systems, hence resulting in the dissemination of articulated knowledge within an organisation. Likewise, Singh (2008) emphasises the need to use EK as a management tool in manipulating organizational knowledge. On the other hand, TK emphasises on observing and understanding the types of knowledge possess by employees within an organisation by shifting these workers in order to ensure that knowledge is transferred within the organisation itself, therefore viewing and managing key knowledge workers as initiators and transporters of knowledge (Sanchez, 2004). Hence, knowledge should therefore be considered as part of an organisation's production resource that must be shared, applied and improved

amongst workers so as to generate creative ideas to existing problems or challenges.

Knowledge management (KM) is predominantly becoming an essential and significant component in business strategy (Iyer & Ravindran, 2009). Therefore, KM should not be viewed as just a management 'fad' since researchers like Chen & Hatzakis (2008) interpreted KM as layers of assortment that can be broken down into norms, practices and, technology that covers most of the aspect of enterprise's core business process in spearheading organisational effectiveness. Besides, KM is also distinguished as practices that allow an organisation to produce value from their worker's intellectual and organisational knowledge-based resources (Levinson, 2007). However, it is also observed that by producing value from these resources, there is somehow a need to codify the knowledge possessed by individuals (in this case: employees, partners, and customers), and to transfer that knowledge among individuals within and between departments or even organisations in an attempt to formulate firm's best practices (Levinson, 2007). As a result, KM should then be established as a discipline that allows a range of individuals, teams and organisations to collectively and systematically create, share and apply knowledge (Young, 2007) in further affecting businesses' viability and success.

2.2 KM Critical Success Factors (CSFs)

To date, numerous studies had been carried out to identify the acceptance of CSFs in the perspective of SMEs. Since then, CSFs has provided important meaning to KM through the identification of the core business process that is critical to the success of KM adoption in the SME sector. Based on the review of literatures undertaken, five (5) CSFs are to be considered and determined in this study: culture; leadership; employee participation; ICT; and organisational structure. Each of the critical factors will be discussed in the following sub-section.

2.2.1 Culture

Each and every organisation conjures and delivers its very own unique significant culture, which inevitably includes values, norms, attitudes, and behaviours (Ramus, 2001) that characterised the day-to-day functioning of an organisation. While culture is not the only determinant in the success or failure of a business, a positive culture nevertheless can bring significant advantages to an organisation in terms of providing an enjoyable working environment that increases business performance. This will inevitably increase the level of teamwork, sharing of knowledge, and openness to new ideas amongst workers (Goffee & Jones, 1996). A culture that acknowledges the importance of sharing knowledge amongst organisations are in fact important and should therefore be crucially considered especially when implementing KM. Hence, the significance of a culture is thereby

recognised as a major contributor to KM as it represents a major source of competitive advantage for organisations especially SMEs in improving their business performance (Wong, 2005), thereby increasing innovation, creativity, and providing more opportunities for SMEs to compete.

2.2.2 Leadership

Management leadership plays a key role in influencing the success of KM (Holsapple & Joshi, 2000; Horak, 2001). It is therefore strongly supported by Singh (2008) that the importance of leadership should not be taken lightly especially the well sought-after leadership styles, in making sure that KM processes runs smoothly. Leaders are important in acting as role models to exemplify the desired behaviour for KM. Hence a leader such as the manager should therefore be able to influence his or her workers to accomplish their objectives and directs the enterprise in a way that makes it more cohesive and coherent in obtaining the desired organisational results (Sackman, 1992). Likewise, an effective leader capitalises on employees' strengths by making effective decisions and reacts promptly to changing conditions. Consequently, the support and commitment provided by leaders should therefore be ongoing in improving an enterprise business performance in contributing towards the success of KM, eventually making leadership a critical factor in supporting the KM initiative. In essence, it is this leadership support that enables KM to be implemented in organisations all over (Horak, 2001)

2.2.3 Employee Participation

Effective employee participation brings promising employee satisfaction, quality improvement and productivity enhancement in SMEs (Pun, Chin, & Gill, 2001). Hence, it is unquestionable that employee participation does play crucial in achieving KM initiative. By functioning in a knowledge-intensive enterprise, employees are able to apply their diverse skills and experiences in work processes and problem solving matters. With this, it is essential for all employees within an organisation, especially SME whereby agility and responsiveness at all levels are to be considered as sources for competitive advantage (McAdam & Reid, 2001). Therefore, encouraging participation is important in fostering the spirit of teamwork among employees to ensure that accurate information is able to reach the right individual at the exact time, which is the true goal of any KM initiative within SMEs. This will inevitably promote employee participation in promoting a culture of sharing (Chin, Chan, & Lam, 2008), not only knowledge but essentially crucial knowledge to further increase organisational performance.

2.2.4 Information and Communications Technology (ICT)

ICT does play a very significant and crucial role in assisting SMEs in creating both business

opportunities and combating competition pressures. It seems that the effectiveness and efficiencies of ICT in supporting KM adoption is an essential requirement at the very beginning and across the KM maturity stages (Hsieh, Lin, & Lin, 2009). As a matter of fact, Chowdury & Ahmed (2005) views ICT as a vehicle that allows the flow of knowledge in organisations. Besides, Maguire, Koh, & Magrys (2007) had supported the realisation of how firms' competitive advantage can be achieved by adopting ICT and KM in SMEs. Hence, greater use of ICT may inevitably help firms increase their overall efficiency (Dutton, Kahin, O'Callaghan, & Wyckoff, 2005). By utilising tools such as e-mails, groupware, the Internet, and intranets, employees with indispensable knowledge can be identified and connected to each other by sharing indispensable knowledge. In addition, according to Wong (2005), it is therefore irrefutable that one of the key enablers for implementing KM is ICT.

2.2.5 Organisational Structure

In terms of structure, SMEs have distinct advantages when it comes to implementing KM. Rasheed (2005) had theorised that SMEs have a much simpler, flatter and less intricate structure, which thereby ease the change initiative across the entire organisation since functional integration, consisting of both horizontal and vertical, will be easier to attained. With this, he further iterates that fewer complications will be encountered by SMEs in implementing KM as they have an advantage over large enterprises in respect to this structure. In SMEs, the managers are in most cases the owners, which imply that decision-making is centralised, with fewer layers of management (Rasheed, 2005). Thus, the advantage for proprietors in SMEs, is that they become the key drivers for KM adoption, assuming of course that they do somehow appreciate the importance of KM.

2.3 KM Processes

As elucidated by Gold, Malhotra, & Segars (2001), KM processes is a planned coordination for controlling knowledge in an effectively way. It is important for organisations to follow the steps of KM processes more effectively. To simplify the analysis of KM processes, this study consist of four (4) processes: 1) knowledge creation, 2) knowledge transfer, 3) knowledge sharing and, 4) knowledge utilisation.

Knowledge creation comprises of activities that are associated with the entry of new knowledge into the system, which includes knowledge development, discovery and capture. Hence, the creation of new knowledge in turn generates higher levels of innovative output, which is then manifested in maintaining business performance. According to Bhattacharya & Choudhury (2004), knowledge creation revolves around the activities that result in the conversion of knowledge. The process of conversion involves creation of TK through informal

sharing, moving from TK to explicit, and enhancing explicit content by combining codified knowledge and using EK to create new TK through thinking and sharing.

The most common method of knowledge transfer across companies in all industries is informal interactions between experts and practitioners through sustained mentoring or apprentice relationship, or through brief discussions by phone or video conference. Besides, transfer of knowledge requires an individual or a group to cooperate with each other to distribute knowledge and achieve mutual benefits (Syed-Ikhsan & Rowland, 2004).

Senge (1992) argues that knowledge sharing is not about providing workers with something, or obtaining something from them, instead knowledge sharing is about disseminating and making available what is already known (Tiwana, 2000). For that reason, knowledge sharing is critical to a firm's success as it leads to faster knowledge deployment to various segments of the organisation that can greatly benefit from it (Syed-Ikhsan & Rowland, 2004). Hence, with this in mind, many SMEs wish to share knowledge, as they view co-operation with consumers as vital and without a doubt beneficial. For SMEs, developing means for effective knowledge sharing is crucial (Bhattacharya & Choudhury, 2004) as a route to organisational survival.

Lastly, knowledge utilisation includes activities and events connected with the application of knowledge to business processes. Research shows that knowledge utilisation in enterprises results from the mutually dependent influences of organisational processes, control opportunities and control problems that arise through organisational structure (KPMG, 1998). The effective utilisation and application of knowledge are dependent on factors such as clear understanding of roles, opportunities in using it, a need to take action, and an awareness of the benefits to be gained from its application (Wong, 2004).

3.0 RESEARCH METHODOLOGY

The conceptual framework for this study is shown in Figure 1. In this framework, one (1) dependent variable i.e. KM Processes, which includes knowledge creation, transfer, sharing, and utilisation; and five (5) independent variables i.e. culture, leadership, employee participation, information and communication technology (ICT), and organisational structure to be tested.

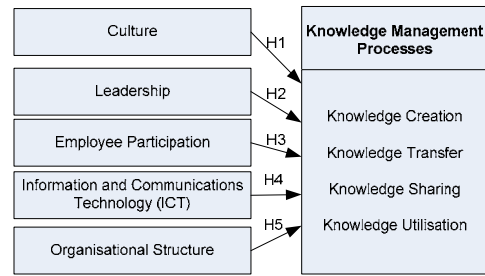


Figure 1: Research conceptual framework

A questionnaire method was used as the primary research instrument to collect necessary data. The questionnaire consists of three (3) sections. Section A consists of questions related to respondents and organisational demographic characteristics, using ordinal and nominal scale to measure the respondents' answer. Section B contains questions on the degree of KM practices in the organisation. Each variable is measured using a five-point Likert scale (not implemented to extensively implemented) to examine the importance of KM adoption among Malaysia's SMEs. Section C measures the CSFs that motivate KM processes in SMEs. These questionnaires were sent to SMEs in both the state of Johor and Melaka.

4.0 RESULTS AND DISCUSSION

From the collected questionnaires, a total of 173 responses were obtained and tested in this research; achieving 86.9% of the total 200 questionnaires sent out. The profile of the respondents is shown in Table 1.

The respondents were instructed to indicate type of ownership, type of industrial sector, significant investment in KM, stage of KM development, and technological facilities investment in KM. Based on the feedback given, a total of 146 are sole proprietorship businesses whereas the remaining 27 are partnerships. Large proportions of the respondents came from the manufacturing industry (43.4%). The second highest came from the services industry (33.5%), followed by agriculture (9.2%), food (8.7%), automation (3.5%), while the electronic sector is having the lowest representation (1.7%). It seems that 81 out of the 173 businesses had only recently spent 1 to 2 years of significant investment in KM. Further, 78 respondents indicated that they are currently evaluating the importance of the KM implementation in their businesses. In terms of technological facilities, 93 respondents (53.8%) had access to internet at work.

Table 1: Profile of the respondents.

Respondent's Profile		Frequency	Percentage (%)
Gender	Male	80	46.20
	Female	93	53.80
Age	21-25	37	21.40
	26-30	52	30.10
	31-35	43	24.90
	36-40	20	11.60
	41-45	12	6.90
	46-50	7	4.00
	51 and above	2	1.20
Position	Manager	31	17.90
	Supervisor	22	12.70
	Executive	86	49.70
	Non Management	34	19.70
Department	Finance	15	8.70
	Human Resource	28	16.20
	Marketing /Sales	32	18.50
	Engineering	2	1.20
	Quality Control/ Assurance	13	7.50
	Research and Development	1	0.60
	Information Technology	7	4.00
	Production	53	30.60
	Customer Service	21	12.10
	Other	1	0.60

Reliability analyses were conducted on all the independent and dependent variables. Result yield Cronbach Alpha (α) value ranging from 0.709 to 0.788 as shown on Table 2. The rule of thumb is the closer to 1.0, typically over 0.70, signified high reliability (Berstein & Nunnally, 1994).

Table 2 shows the mean and standard deviation of the CSFs of SMEs and KM processes in Malaysia. Among all the variables tested in this study, Leadership has the highest mean of 3.55 with a standard deviation of 0.595. This is because leaders are roles models to exemplify the desired behaviour for KM (Wong, 2005). Likewise, this shows that top management incorporating leadership styles have direct impact on how enterprises should approach and deal with KM processes (Singh, 2008) and that leaders across all the levels of organisation does have a unique and important role to play in managing knowledge (Kluge, Stein, & Licht, 2001). The overall mean and standard deviation score for KM processes is 3.40 and 0.455. With this, it is thus proven that KM processes does help in creating, transferring, sharing, and utilising organisation's TK and EK (Becerra-Fernandez, Gonzalez, & Sabherwal, 2004).

Table 2: Summary of means and standard deviations of CSFs and KM processes.

CSFs					
No.	Variables	Mean	Standard Deviation	α	No. of item
1.	Culture	3.48	0.589	0.735	4
2.	Leadership	3.55	0.595	0.726	4
3.	Employee Participation	3.43	0.603	0.760	4
4.	ICT	3.48	0.554	0.726	5
5.	Organisational Structure	3.15	0.562	0.709	5
KM Processes					
1.	KM Processes	3.40	0.455	0.788	10

In many statistical analyses, normality is often easily understood without conducting any empirical evidence. Herewith, normality is critical in many statistical methods. Due to this, whenever this assumption is violated, the interpretation and inference may not be reliable or valid (Park, 2008). Table 3 shows the result of the normality test on the CSFs and KM processes. The significant p -value is less than 0.05 and it means that data distribution significantly varies from a normal distribution. Thus, the data is not normally distributed.

Table 3: Normality test for variables.

Variables	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Culture	0.202	173	0.000	0.936	173	0.000
Leadership	0.163	173	0.000	0.968	173	0.001
Employee Participation	0.155	173	0.000	0.961	173	0.000
ICT	0.150	173	0.000	0.970	173	0.001
Organisational Structure	0.094	173	0.001	0.973	173	0.002
KM Processes	0.112	173	0.000	0.966	173	0.000

As a result of the non-normal nature of the data, a Spearman's Rho correlation is used instead of Pearson correlation to decide on whether there was a relationship between the variables. There were five (5) hypotheses developed in this research and tested by using correlation test. The results indicated on Table 4 shows that Spearman correlation r -value for Culture, Leadership, Employee Participation, Information and Communications Technology (ICT), and Organisational Structure are significant at 0.01 respectively. Therefore, the test concludes that there is a significant correlation between CSFs and KM Processes. So, H1 to H5 are rejected.

5.0 CONCLUSION AND RECOMMENDATION

KM has become an accepted part in both the business and academic arena. All organisations have high expectations of KM in playing a significant role to improve firms' competitive advantage (KPMG, 1998), for that reason they are well aware of the

importance of KM in influencing current and future SMEs performance. Equally, measuring the business value of KM initiatives has become essential to ensure that certain business opportunities are therefore being realised.

Table 4: Summary of correlation test between CSFs and KM processes.

Hypothesis	Independent Variables (CSFs)	Dependent Variable (KM processes)	
H1	Culture	Spearman correlation Significant (2-tailed) N	0.516 0.000 173
H2	Leadership	Spearman correlation Significant (2-tailed) N	0.447 0.000 173
H3	Employee Participation	Spearman correlation Significant (2-tailed) N	0.206 0.007 173
H4	ICT	Spearman correlation Significant (2-tailed) N	0.502 0.000 173
H5	Organisational Structure	Spearman correlation Significant (2-tailed) N	0.542 0.000 173

This research determines that generally SMEs do execute KM inside the organisation and had also plan to invest in a number of KM application. Unfortunately, it seems that SMEs are unable to fully utilise the benefit of KM in their organisations. Nevertheless, it is hoped that SMEs with the help of this study, are able apply the CSFs and KM processes as a guideline in achieving successful KM adoption. It is anticipated that the factors proposed in this study could help businesses especially SMEs to better organise their KM initiatives, as well as to assists our country in producing knowledgeable society and at the same time creating exceptional wealth.

Hence, the findings of the present study have deepened the understanding of knowledge in the field of KM, especially among SMEs in Malaysia. Besides identifying and subsequently reinforcing the importance of various KM success factors, this study had also identified the level of KM processes in these enterprises. Therefore, the research findings are able to assists our Malaysian SMEs to understand better the various proposed critical factors so that action can be taken to overcome unwarranted gaps. In addition, this study may provide insights to SMEs on how to properly frame

their KM strategies and activities in the right perspective.

6.0 LIMITATIONS OF STUDY

Several limitations had been identified in this research. Firstly, this research had only analysed the SMEs based on the degree of implication of the CSFs and KM processes, therefore the results obtained may be directly applicable to this market segment only. For this reason, it may not be applicable to other industries besides the SMEs of Malaysia. Secondly, it may also not able to directly generalise SMEs in terms of CSFs and KM processes of other countries in the same segment. Thirdly, this study consists of a limited sample size of 173 respondents. Therefore, the results obtained may not be generalisable. Moreover, the targeted area is quite limited as it only focuses on SMEs from both the state of Johor and Melaka only instead of the whole of Malaysia (including Sabah and Sarawak). Thus the outcomes of this study may not be able to represent the entire SMEs in Malaysia. Lastly, the respondents are limited as only the top management level had participated in this study.

7.0 FUTURE STUDY

The current research reveals an important substantiation to the theoretical findings identified in advance in literatures with respect to the crucial factors that are important in ensuring the successful adoption of KM among Malaysia's SMEs.

With this, researchers and practitioners alike may study the adoption of KM in other segments of the industry. This will further help to increase the competencies of SMEs in managing knowledge and increasing organisational performance. Likewise, the scope of study can be extended to the whole of Malaysia including East Malaysia consisting of both Sabah and Sarawak so as to substantially increase the number of respondents as well as to maintain concise accuracy in terms of results.

Moreover, in future studies, it is expected that researchers may be able to recognise other critical factors in KM adoption not only in SMEs but also in other industries as well. For researchers who are keen in conducting similar research, this study can be further analyse and can act as a guide and reference to enhance the understanding of KM's CSFs and KM processes that had previously been identified. In addition, other additional factors that have not been measured in this research can be taken into consideration in future studies.

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