Influence Of Soft Elements On KM Implementation In Malaysian Higher Learning Institutions

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ABSTRACT:

Knowledge Management (KM) is an approach in *identifying, acquiring, applying, sharing, creating, developing, preserving and measuring* the knowledge of the organization. However, recent global analyses of such KM initiatives highlight the fact that not all of them are necessarily successful. The reason is due to the efforts on technology. Practitioners are now realizing the importance of the soft aspects of KM initiatives. Moreover, there is an organizational lack of data and information on the soft elements of critical success factors of KM. The main purpose of this study is to examine the relationship between the soft elements of critical success factors and KM perceived benefits. This study was accomplished through questionnaires that surveyed 99 higher learning institutions that are located in the Malaysia. Findings revealed that organizational culture and top management leadership have a positive relationship with the perceived benefits of KM.

Keywords: *Knowledge management, Soft elements, Critical success factors, Perceived benefits*

1. Introduction

As the growing demand for knowledge-based services is changing the structure of the global economy, the role of knowledge in achieving competitive advantages is becoming an important management issue in higher education.

Creating, managing and transferring knowledge is at the top of the agenda for a growing number of organizations. As the transition from the industrial age to a global knowledge economy gathers pace, it is imperative for organizations to understand and develop knowledge management business strategies and tools (Chase, 1997). Therefore, practice of knowledge management is essential in an organization.

2. Literature Review

The following sections are the literature review which consisted of KM definition, soft elements of CSFs of KM, and perceived benefits of KM.

2.1. Definition Of Knowledge Management

Defining KM is difficult because it has multiple interpretations. The following are definitions of KM which illustrate the varying views of many researchers and practitioners:

- KM is the explicit and systematic management of vital knowledge and its associated processes of creation, organization, diffusion, use and exploitation. (Skyrme and Amidon, 1997)
- KM is a fluid mix of framed experience, values, contextual information and expert insight that provides a framework for evaluating and incorporating new experiences and information (Davenport & Prusak, 1998).
- Salleh & Goh's (2002) define KM as a process of leveraging knowledge as means of achieving innovation in process and products/services, effective decision-making, and organizational adaptation to the market for creating business value and generating a competitive advantage to organizations.
- KM is a systematic, explicit and deliberate building, renewal and application of knowledge to maximize a firm's knowledge-related effectiveness and returns from its knowledge assets (Wiig, 1997).
- Ow et al (2001) found that KM has multiple interpretations. When applied in an IT context, KM is about the managing of hardware, software or systems. Applied in a business education context, less attention is focused on technical aspects of KM and more emphasis is given to social aspects such as organizational theory, leadership and other issues in the human side of management. The curricula of Asian institutions of higher education appear to follow this pattern. With respect to the management of higher education establishments themselves, however, KM is clearly to be interpreted in the second and broader sense.
- KM can be defined as the process for acquiring, storing, diffusing and implementing both tacit and explicit knowledge inside and outside the organization's boundaries with the purpose of achieving corporate objectives in the most efficient manner (Magnier-Watanabe & Senoo, 2008).

2.2. Soft Elements Of Critical Success Factors Of KM

2.2.1. Organizational Culture

Organizational culture is imperative factor for successful KM. In general, culture supportive of KM is one that highly values knowledge and encourages its creation, sharing and application. A survey result reported by Chase (1997) affirmed that culture is the largest obstacle faced by organizations in creating a successful knowledge - based enterprise.

Numerous studies have also pointed out the importance of culture to KM. An essential element of success in KM is creating an organizational culture that can motivate, support and encourage, capture, create, share, codify, and reuse knowledge at an individual, group and organizational level. According to Choi (2000), KM cannot be established and implemented without the support of a knowledge - friendly culture. That is, transformation to a knowledge - centered organization is possible only when organizational culture becomes conducive for KM because of the basic assumptions, norms and values that guide employee behaviors which are encompassed by the culture of an organization. In addition, Davenport and Prusak (1998) also supported that one of the most important conditions leading to the success of a KM project in their survey is knowledge - friendly culture where employees are bright, intellectually curious and are willing and free to explore without fear. Hence, sharing knowledge requires a company culture that encourages people to share it without fear and freely exchange their thoughts, ideas and ways of working (Sydanmaanlakka, 2002).

Beijerse (1999) suggested that company culture of motivation is essential to be adopted in the organization because this is important for the sharing and utilization of knowledge. This company culture is tailored to it. A company culture in which the production factor of knowledge can come to its optimum advantages lays its focus on the stimulation and exploitation of the creativity of its employees. The culture is informal and orientated on problems tasks and results. The culture is characterized by openness, flexibility and inclination to not fear of taking risks. Making mistakes in such an organization is seen as an investment in a person's learning process. Learning is therefore seen as very important.

Kermally (2002) said that managing knowledge is about creating an environment within your organization so that people can openly share their experience and transfer knowledge. The culture has to be appropriate for knowledge to be created and transferred. This is one of the key responsibilities of an effective leader and this is what the culture is all about.

Goh (2002) asserted that a collaborative culture is an important condition for knowledge transfer to happen between individuals and groups. This is because knowledge transfer requires individuals to come together to interact, exchange ideas and share knowledge with each other.

Hogberg & Edvinsson (1998) said that the companies need a creative and supportive environment that captures, encourages, stimulates, recognizes and rewards knowledge creation and sharing, an environment that works like a catalyst for people's creativity.

To implement KM, an organization's culture must foster a means of sharing because organization tends to share successes to a limited extent. Organizations certainly need to share failures, although "failures" may not be the correct word if the organization learns from the process (Shockley, 2000).

At Buckman Laboratories, one very significant aspect of its culture consists of its knowledge - enterprising characteristic that promotes knowledge transfer. Part of the unique culture puts the world's most knowledgeable experts at all levels of Buckman's organization in touch with each other, thus encouraging group problem-solving and the sharing of new ideas and knowledge. Within its global organization, this knowledge - enterprising culture enables Buckman personnel to collaborate closely with one another, unbounded by factors like distance and time zones. It encourages open, unrestricted communication among Buckman experts, and the free exchange of ideas. This culture is critical in helping Buckman to find innovative solutions to customer challenges and to develop products in anticipation of future needs. A knowledge - enterprising culture is one of the most important conditions leading to the success of a knowledge management project. It is perhaps the most difficult part to build from scratch. It is this knowledge enterprising culture which has helped Buckman Laboratories to become one of the pioneer organizations in Knowledge Management (Pan & Scarbrough, 1998).

Song (2008) mentioned that the people must look at the human side as well as the data side of the equation. KM only can be implemented successfully if an encouraging environment is in place and that it is collaborative or sharing towards it.

Harvey & Denton (1999) agreed with Reamy (2001) and support the importance of culture, noting that to compete globally in business one needs to be rich in technology, and to be rich in technology one needs knowledge and a culture which prizes knowledge. Therefore, the success of KM is 10 percent systems and IT, and 90 percent people and culture.

Therefore, organizational culture is a CSF for KM implementation.

2.2.2. Top Management Leadership

Many researchers (Chong, 2006; Liebowitz, 1999; Civi, 2000; Davenport & Prusak, 1998; Dutta, 1997; Greengard, 1998; Guns & Valikangas, 1998; Moffett et al, 2003; Pemberton et al, 2002; Ryan & Prybutok, 2001; Salleh & Goh, 2002) have insisted that top - management leadership and commitment are the most critical factors for a successful knowledge management project, particularly in knowledge - creating and culture - sharing activities.

Furthermore, according to the international survey, the top management and the information technology group were cited by more than half of the respondents as leading KM activities in their investigation (Chase, 1997). At 3M, KM does not just bubble up from middle management; top management see it as one of the major duties to encourage knowledge linkages (Brand, 1998).

At Xerox, a consistent communications strategy from senior management demonstrates similar support. Besides giving verbal support, senior managers have adopted a hands - off policy toward KM projects to ensure that the process of innovation is not hindered by bureaucracy or budgetary considerations (Hickins, 1999).

Wah (1999) argued that top management is needed to put into in action knowledge - sharing as the way to move forward and know what knowledge should be captured. Top leadership should lend full support to KM strategies, constantly probe the unknown and bounce it off project teams to get them thinking about new ideas.

When planning the KM program, the organizations need to consider whether to create a leadership role to develop and drive the process, for instance, a chief knowledge officer. Many firms have developed responsibility to an existing or new position. Some firms use a cross - functional team to develop knowledge management while in others the CEO has taken a leading role (Soliman & Spooner, 2000). Cook (1999) said that the Knowledge champions can be very helpful as catalysts. These can be specially created roles as used in companies. In fact, it has been reported that over 40 % of Fortune 1000 companies have Chief Knowledge Officers (Chong, 2006).

Politis (2001) said that the knowledge-enabled leader is capable of understanding the strategic relationship between knowledge acquisition and the business processes and functions; supporting and facilitating employees to acquire and share knowledge; leading the enterprise's effort to exploit knowledge; sponsoring and supporting ideas for further use in knowledge strategies for knowledge acquisition.

In order to manage knowledge effectively, Drucker (1992) also mentioned that the foundation of effective leadership is thinking through the organization's mission, defining it and establishing it, clearly and visibly. The leader sets the goals, sets the priorities, and sets and maintains the standards. He makes compromises, of course; indeed, effective leaders are painfully aware that they are not in control of the universe.

Jarrar (2002) stated that senior management support is a common cliché for all change and improvement programs. The type of support needed includes sending messages that KM and organizational learning are critical to the company's success, providing funding and other resources for infrastructure and direct modelling of the desired behaviour.

Kermally (2002) mentioned that leadership has to be looked at as a holistic concept. There has to be focus on attributes such as values, credibility, power, integrity, ability to see the whole picture and ability to motivate staff. If the leader and employees share the same values and they internalize these values, the bond between the leader and employees will be strong. In a situation like this, staff will freely communicate in order to transfer their knowledge. An effective leader has to focus attention on organizational culture, in relation to the share beliefs, values and expectations of the people in the organization. It influences the performance of every individual and consequently affects organizational performance.

Therefore, top management leadership is a CSF for KM implementation.

2.3. Perceived Benefits Of KM

According to Bhatt (2001), in recent years, KM has become a critical subject of discussion in the business literature. Both business and academic communities believe that by leveraging knowledge, an organization can sustain its long-term competitive advantages. A KM philosophy emphasizes learning collaboratively so that they can add more value to their products and services for the customers**.**

According to a survey done by McAdam & McCreedy (1997), the perceived benefits of KM are the four top scoring items which are improved quality, efficiency, management learning and reduced costs. They are seen to relate to improving internal efficiency within the organizations. . Improve consistency and competitiveness through reduced costs, were seen as being associated with efficiency.

According Santosus & Surmacz (2001), the benefits that companies can expect from KM are:

- Foster innovation by encouraging the free flow of ideas
- Improve customer service by streamlining response time
- Boost revenues by getting products and services to market faster
- Enhance employee retention rates by recognizing the value of employees
- Streamline operators and reduce costs by eliminating redundancies (cost of defects)

According to Jilinda et al (2000), implementing KM in higher education is as vital as it is in the corporate sector. KM can lead to better decision-making capabilities, reduced "product" development time (i.e. curriculum development and research), improved academic and administrative services and reduced costs.

According to Beijerse (1999), by managing knowledge, organizations can:

- Improve efficiency
- Improve the market position by operating more intelligently on the market
- Enhance the continuity of the company
- Enhance the profitability of the company
- Optimize the interaction between product development and marketing

- Improve group competencies
- Make professionals learn more efficiently and more effectively
- Provide a better foundation for making decisions like making or buying of new knowledge and technology, alliances and mergers
- Improve communication between knowledge workers
- Enhance synergy between knowledge workers
- Ensure that knowledge workers stay with the company
- Make the company focus on the core business and on critical company knowledge

A comprehensive survey of the German TOP 1000 and European TOP 200 companies showed that KM helps to achieve the goals of a company. KM can best be used to increase innovation ability, increase of product quality, reduction of goals, increase of effectiveness and customer satisfaction (Mertins et al, 2001)

3. Objectives And Hypotheses Of The Research

The objectives of the research are:

i. To identify the soft elements of critical success factors (CSFs) affecting the success of KM implementation in higher learning institutions in Malaysia.

ii. To identify the perceived benefits of KM implementation in higher education in Malaysia.

iii. To identify the relationship between the soft elements of CSFs of KM and perceived benefits of KM.

Below are hypotheses of the soft elements of CSFs of KM and the perceived benefits of KM. The hypotheses are developed based on the literature review. The hypotheses of the research are:

H1: There is a positive relationship between *organizational culture* and *perceived benefits of KM.*

H2: There is a positive relationship between *top management leadership* and *perceived benefits of KM.*

4. Research Design And Methodology

The questionnaire was designed which was based on the literature review. The research methodology involved using a mail questionnaire survey. The survey data was analyzed using a SPSS statistical analysis package.

The questionnaire was composed of three sections. The first section is about the respondents' demographic and organizational profile. The second section is about the CSFs of KM. The third section of the questionnaire is about the perceived benefits of KM. Table 1 shows the mail questionnaire design which provides a more detailed breakdown of the number of items pertaining to each dimension.

Table 1: Mail Questionnaire Design

Sections	Description	Dimensions	No. of Questions
1	Organizational Profile	• Faculty/Departments • Faculty Staff Size • No. of University/College Operational Years • Ownership	1 1 1 - - 1 -
2	CSFs of KM	Organizational Culture	5
		Top Management leadership	5
3	Perceived benefits of KM	Cost reduction, quality, creativity and innovation, efficiency, Staff competency, research, reputation.	1

For ease of completion, all the questions in this questionnaire were framed as "closed" questions or statements with accompanying 5-point Likert scales.

5. Data Analysis

Total of 99 samples out of the population of 500 were gathered from institutions of higher learning in Klang Valley, Malaysia. Table 1A shows that the majority of the faculties sampled were of information technology (32.6 %), followed by engineering (14.3%), business management (12.2%) and others are 40.9%. Additionally, samples were gathered mostly, 58.8% and 20.6% from faculties

staff size, from the bracket groups of (1-20) people and (21-50) people respectively. From Table 1B, it can be noted that the staff size, both faculty and whole higher learning institutions, reflect that the majority of units sampled were from private colleges. Indeed, 73.2 percent of departments sampled were privately owned, as opposed to only 17.5 percent that are fully operated by the government. This provided a basis to assert that our samples are representative of higher learning institutions in Klang Valley, Malaysia.

Table 1A: Profile Of Respondents (Faculty, Staff Size)

Profile	**Description**	**Percentage**
Faculty/Departments	IT	32.6
	engineering	14.3
	business management	12.2
	education	11.2
	mathematics	10.2
	architecture	7.1
	law	4.1
	science	4.1
	linguistics	3.1
	medicine	1.1
Faculty Staff Size	1-20	58.8
	21-50	20.6
	51-90	6.2
	91-140	3.1
	141-200	2.1
	>200	9.3

Table 1B: Profile Of Respondents (University Staff Size, Years and Ownership)

No.of University/College Operational Years	1-10	64.9
	11-20	14.4
	21-30	4.1
	31-40	7.2
	41-50	5.2
	>50	4.1
Ownership	Fully private	73.2
	Fully government	17.5
	Semi Government	6.2
	Majority Government	2.1
	Majority Private	1.0

The reliability of a measure indicates the stability and consistency with which the instruments are measuring the concepts and helps to assess the goodness of a measure (Sekaran, 2000). The Cronbach Alpha was used to access the internal consistency of the statistics. The higher the correlations among the items, the greater the alpha. Cronbach Alpha varies from 0 to 1.

Calculation of reliability was conducted (by using Cronbach Alpha) on each dimension that had been extracted. The general rule of thumb is more than 0.70 (Nunally, 1978). Table 2 shows the all the reliability results is more than 0.70.

Table 2: Reliability Analyses Of The Variables Extracted

CSFs of KM	**No. of Items**	**α**
Organizational Culture	5	0.86
Top Management Leadership	5	0.86

As shown in Table 3, the mean values of CSFs of KM are over the midpoints of their respective scales, given that the mean values range from 4.20 to 4.26. Organizational culture charted the highest mean value (4.26) and followed by the top management leadership (4.20). This implies that organizational culture is the most important success factors of KM in this study. This is supported by a research survey done by Mason & Paulen (2003). They mentioned that organizational culture is the most important factor in implementing KM. Furthermore, Davenport & Prusak (1998) consider the notion of social capital critical to KM, and consider culture as an important factor in KM. This finding also is consistent with KM researchers Choi, (2000), Skyrme & Amidon (1997), and Chase (1997) who also agreed that culture is the important factor in KM implementation.

Table 3: Descriptive Statistics For Variables

Variables	**Mean**	**Std. Deviation**	**Skewness**		**Kurtosis**	
			Statistic	**Std. Error**	**Statistic**	**Std. Error**
KM CSFs						
Organizational Culture	4.26	0.57	-0.29	0.24	-0.75	0.48
Top Management Leadership	4.20	0.64	-0.74	0.24	1.01	0.48
Perceived benefits of KM	3.68	0.75	-0.68	0.24	0.97	0.48

Multiple regression analyses (MRA) were performed to determine the following sets of independent variables and their contribution towards the variation of the dependent variables. There is one dependent variable identified which is perceived benefits of KM (which includes cost reduction, quality performance, creativity and innovation, efficiency, reputation, research and staff competencies). Independent variables, on the other hand are organizational culture and top management leadership. The following estimate regression model needs to be developed in Multiple Regression Analyses.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 \ldots + \beta_{p-1} X_{p-1}$$

Y is dependent variables and X_1 , X_2 , …X_{p-1} are the independent variables.

The results of the multiple regression model which is shown in Table 4 and Figure 1 (significant at 99.9 percent confidence level) revealed that the strongest predictor is organizational culture ($\beta = 0.36$, $p < 0.01$), followed by top management leadership ($\beta = 0.29$, $p < 0.05$).

Table 4: Result Of Multiple Regression Analysis

Independent Variables	**Beta Standardized**
Organizational Culture	0.36*
Top Management Leadership	0.29**
Note: *Sig. at $p < 0.01$ **Sig. at $p < 0.05$, Dependent Variable = Perceived Benefits	

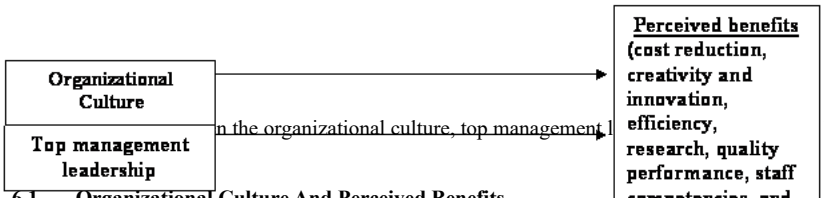
The result shows that organizational culture is positively relationship with the perceived benefits of KM.. The results of the multiple regression model revealed that the strongest predictor is organizational culture ($\beta = .36$, $p < .01$) which is shown in Table 4. It means that organizational culture plays a greater role in implementing KM in order to gain perceived benefits.

Second CSF of KM implementation is top management leadership which also shows that there is positively relationship with the perceived benefits of KM. The results of the multiple regression model revealed that top management leadership to perceived benefits is the second strongest predictor ($\beta = .29$, $p < .05$) which is shown in Table 4. This research study believes that top management leadership brings the benefits to the organization.

Figure 1: Results Of Hypotheses

β= 0.36*

β= 0.29**



n the organizational culture, top management l benefits of KM are discussed in the

6.1. Organizational Culture And Perceived Benefits

One of the CSFs of KM implementation is organizational culture. Org found to positively influence the perceived benefits of knowledge management. The results of the mult vealed that the strongest predictor is organizational culture ($\beta = 0.36$, $p < 0.01$) which is shown in Table 4. In other words, it means that the strongest predictor is organizational culture. More specifically, organizational culture plays a greater role in implementing knowledge management in order to gain perceived benefits. This is supported by many researchers such as McDermott & O'Dell (2001); Harvey & Denton (1999); Skyrme & Amidon (1997); Greengard (1998); Beijerse (1999); Bank (1999); Kermally (2002); Ow et al (2001); American Productivity and Quality Center (1999); Liebowitz (1999) and Davenport & Prusak (1998).

The authors found that an open and flexible organizational culture, the employees can freely exchange and share their working experiences, best practices and learning experiences. This knowledge - sharing activities contribute to creativity and innovation. For instance, numbers of new ideas, numbers of new teaching approaches and numbers of new research, and new programmes are developed.

This is in agreement with Tippins (2003) and Jilinda et. al (2000), they mentioned that open and flexible organizational culture is important within the organization, and this culture will lead to better decision-making capabilities, reduced "co-curriculum" development time and maximize efficiency.

Pan & Scarbrough (1998) supported this finding by explaining that Buckman Laboratories are very concerned with of knowledge - sharing culture where they encourage group problem - solving and sharing of new ideas and knowledge. This culture is critical in helping Buckman to find innovative solutions to customer challenges and to develop products in anticipation of future needs. In their research, Immad & Syed Amjad (2009) have found that the knowledge management success is strongly and positively related to interdepartmental collaboration or sharing culture.

The authors found that implementation of knowledge creating culture in the organization brings benefits to their organization such as improve the efficiency (faster and better decision making, improving quality and productivity) and competencies (improving skills, shorter learning cycle and better quality of work). This statement agreed by Davenport & Prusak (1998).

The authors found that life - long learning culture lead employees to enhance their knowledge and skills. This essential to be embarked in all higher education in order to increase the quality performance of the students. This finding supported by Ow et.al (2001), they said that the employees should always unlearn and relearn new concepts. With the new knowledge and skills, this will increase the competencies of the staff; as a result, this will enhance the quality performance of the students.

The authors suggested that a culture with a positive orientation to knowledge is one that highly values learning on and off the job. Time and money should be invested in acquiring new knowledge. Hence, life - long learning is therefore seen as very important.

This research study believes that organizational culture is significant in impacting on the perceived benefits of knowledge management.

6.2. Top Management Leadership And Perceived Benefits

Another CSF of KM implementation is top management leadership which was found to positively influence the perceived benefits of KM. The results of the multiple regression model revealed that top management leadership to perceived benefits is the second strongest predictor ($\beta = 0.29$, $p < 0.05$). This research study indicates that with top management leadership brings benefits to the organization.

This finding is consistent with previous and current KM researchers and most organizations considered that top management leadership as the critical success factor of KM implementation (Davenport & Prusak, 1998; Skyrme & Amidon, 1997; Choi, 2000).

The authors found that top management develops and facilitates the KM vision, mission objectives and goals for the organization. With this clear objective, employees will be able to work to achieve it. This will significantly bring benefits such as creativity and innovation to an organization. This is in agreement with Pickering & Matson (1992). Goh (1998) also pointed out that benefits such as effective knowledge being creative and innovative are not possible unless top management develop clear objectives and empower employees and show a strong commitment to the organization.

The authors also found that top management emphasizes continuous improvement based on sharing ideas will bring the benefits to the organization. From the research done by Wong (2005) and Bhatt (2001), they found that sharing knowledge will generate continuous improvement and quality performance.

This research shows that top management encourages employees to give feedback to improve KM performance. This will encourage the employees to contribute more new creative and innovative ideas. For instance, idea boxes or suggestion boxes are provided, so that the employees can freely give ideas and suggestions to improve the organization's performances. Hogberg &

Edvinsson (1998) also supported that companies need to have a supportive environment that can capture, encourage, and stimulate the creative and innovative culture.

Besides that, the authors found that top management provides adequate funds, incentives and rewards for KM implementation in order to motivate the employee to become more efficient and competence. This is strongly supported by Wong (2005), Skyrme & Amidon (1997) and Davenport & Prusak (1998).

The authors found that top management encourages formal and informal communication. For instance, employees are encouraged to share knowledge in a formal way such as meetings, conferences, seminar etc. Besides formal communication, informal communication is encouraged such as informal knowledge - sharing sessions; they are encouraged to share their expertise. As a result, this makes the work to be carried out faster and more cheaply due to the sharing of knowledge, this brings to time savings and increase the efficiency and quality. This is supported by Battersby (2004).

In sum, top management leadership is important in KM implementation and this will positively influence perceived KM benefits.

7. Conclusions

This KM study is important in all the organizations especially in higher learning institutions where managing knowledge is a way of life in higher learning institutions. As we know, managing knowledge is the fundamental enterprise philosophy and culture of organizations competing in the K-Economy. Although many studies have investigated success factors, the scope is too wide, and more IT has been put in place. Hence, this study concentrated on soft elements, i.e. organizational culture and top management leadership rather than hard elements, IT technology. This study has implications for the body of knowledge of KM and for KM practitioners. This study has identified the relationship of Soft Elements of Critical Success Factors with the perceived benefits of KM implementation in higher education. The research shows that organization culture, top management leadership were found to have a positively relationship with the perceived benefits of KM. The model was developed based on the survey research from the higher learning institutions in Klang Valley.

The most significant contribution of this research study is to provide a framework for the development of measurement instruments for KM implementation in all the higher learning institutions. Thus, the model utilized in this study serves as a model for other higher learning institutions.

8. References

American Productivity & Quality Center (1999), Knowledge Management: Executive Summary: Consortium Benchmarking Study Best-Practice Report. Houston, TX, American Productivity and Quality Center.

Banks, E. (1999), Creating a Knowledge Culture, *Work Study,* 48(1), 18-20.

Battersby, K. (2004), The Importance of Knowledge Management, *The ICFAI Journal of Knowledge Management,* 2(3), 43-47.

Beijerse, R.P. (1999), Questions in Knowledge Management: Defining and Conceptualizing a Phenomenon, *Journal of Knowledge Management*, 3(2), 94-110.

Bhatt, G. (2001), Knowledge Management in Organizations: Examining the Interaction between Technologies, Techniques and People, *Journal of Knowledge Management,* 5(1), 68-75.

Brand, A. (1998), Knowledge Management and Innovation at 3M, *Journal of Knowledge Management,* 2(1), 17-22.

Chase, R.L. (1997), The Knowledge Based Organization: An International Survey, *The Journal of Knowledge Management*, 1(1), 38-49.

Choi, Y.S. (2000), *An Empirical Study of Factors Affecting Successful Implementation of Knowledge Management*, University of Nebraska, PhD Thesis.

Chong, S. C. (2006), KM critical sucess factors: A comparison of perceived importance versus implementation in Malaysian ICT companies, *The Learning Organization,* 13(3), 230-256.

Civi, E. (2000), Knowledge Management as a Competitive Asset: A Review*, Marketing Intelligence and Planning*, 8(4), 166-174.

Drucker, P. (1992), Post-capitalist Society, Oxford, Butterworth Heinemann.

Cook, P. (1999), I Heard it Through the Grapevine: Making Knowledge Management Work by Learning to Share Knowledge, Skills and Experience, *Industrial and Commercial Training*, 31(3), 101-105.

Davenport, T.H., & Prusak, L. (1998), *Working knowledge: How Organizations Manage What They Know,* Harvard Business School Press, Boston.

Dutta, S. (1997), Strategies for Implementing Knowledge-based Systems, *IEEE Transactions on Engineering Management,* 44(1), 79 – 90.

Goh, S.C. (1998), Toward a Learning Organization: The Strategic Building Blocks, *Advanced Management Journal*, 63(2), 15-18.

Goh, S.C. (2002), Managing Effective Knowledge Transfer: An Integrative Framework and Some Practice Implications, *Journal of Knowledge Management,* 6(1), 23-30.

Harvey, C. & Denton, J. (1999), To come of age: the Antecedents of Organizational Learning, *Journal of Management Studies,* 36(5), 897-918.

Greengard, S. (1998), Will your culture support KM? *Workforce*, 77(10), 93-94.

Guns, W.D., & Valikangas, L. (1998), Rethinking knowledge work: Creating value through idiosyncratic knowledge, *Journal of Knowledge Management,* 1(4), 287 – 293.

Hickins, M. (1999), Xerox Shares Its Knowledge. In: James, C. and Woods, J, *The Knowledge Management Yearbook 2000-2001,* Oxford: Butterworth-Heinmann Press, 98-107.

Hogberg, C. & Edvinsson, L. (1998), A Design for Futurizing Knowledge Networking, *Journal of Knowledge Management*, 2(2), 81-92.

Immad K.J, & Syed Amjad F.H (2009), Collaboration Dichotomies In Knowledge Management Success, *Journal of Knowledge Management Practice,* 10(4); www.tlainc.com/jkmp.htm

Jarrar, Y.F. (2002), Knowledge Management: Learning for Organizational Experience, *Managerial Auditing Journal,* 17(6), 322-328.

Jilinda, J. K., Karen, M., Vander, L. & Snadra, L.J. (2000), Applying Corporate Knowledge Management Practices in Higher Education, *EDUCAUSE*, 4, 28-33.

Kermally, S. (2002), *Effective Knowledge Management*: *A Best Practice Blue Print,* West Sussex, John Willey & Sons, Ltd.

Liebowitz, J. (1999), *The Knowledge Management Handbook,* Boca Raton, FL, CRC Press.

Magnier-Watanabe, R. m., & Senoo, D. (2008), Organization characteristics as prescriptive factors of knowledge management initiatives, *Journal of Knowledge Management,* 12(1), 21-36.

Mason, D & Pauleen D. (2003), Perceptions of Knowledge Management: A Qualitative Analysis, *Journal of Knowledge Management*, 7(4), 38-48.

McAdam, R. & McCreedy, S. (1997), A Critical Review of Knowledge Management, *The Learning Organization*, 6(3), 91-101.

McDermott, R., & O'Dell, C. (2001), Overcoming cultural barriers to sharing knowledge. *Journal of Knowledge Management, 5*(1), 76-85.

Mertins, K., Heisig, P. & Vorbeck, J. (2001), *Knowledge Management: Best Practices in Europe,* New York, Springer-Verlag Berlin Heidelbery.

Moffett, S., McAdam, R. & Parkinson, S. (2003), An Empirical Analysis of Knowledge Management Applications, *Journal of Knowledge Management,* 7(3), 6 – 26.

Nunnally, J.C. (1978), Psychometric Theory, 2nd edition. New York, McGraw-Hill.

Ow, C.K., Willett, R.J. & Yap, K.L. (2001), Building a Knowledge-based Business School, *Education & Training*, 43 (4/5), 268-274.

Pan L.S. & Scarbrough, H. (1998), A Socio-Technical View of Knowledge Sharing at Buckman Laboratory, *Journal of Knowledge Management,* 2(1), 55-66.

Pemberton, J.D. & Stonehouse, G.H. (2000), Organization Learning and Knowledge Assets: An Essential Partnership, *Journal of Learning Organization,* 7(4), 184-193.

Pickering, J. & Matson, R. (1992), Why Executive Development Program (Alone) Don't Work, *Training and Development*, 46, 91-95.

Politis, J.D. (2001), The Relationship of Various Leadership Styles to Knowledge Management, *Leadership and Organization Development Journal,* 22(8), 354-364.

Reamy, T. (2001), Knowledge Maps: An Intellectual Infrastructure for Knowledge Management, *Journal of Knowledge Management*, 1(2), 51-60.

Ryan, S.D. & Prybutok, V.R. (2001), Factors Affecting Knowledge Management Technologies: A Discriminative Approach, *Journal of Computer Information Systems,* 41(3), 31 – 37.

Salleh, Y. & Goh, W.K. (2002), "Managing Human Resources Toward Achieving Knowledge Management", *Journal of Knowledge Management*, 6(5), 457-468.

Santosus, M. & Surmacz, J. (2001), The ABCs of Knowledge Management, CIO.

Sekaran, U. (2000), *Research Methods for Business: A Skill Business Approach,* New York, John Wiley and Sons.

Shockley, W. III (2000), Planning for knowledge management, *Quality Progress,* 33(3), 57-62.

Skyrme, D. & Amidon, D. (1997), *The Knowledge Agenda,* The Journal of Knowledge Management, 1(1), 27-37.

Soliman, F. & Spooner, K. (2000), Strategies for Implementing Knowledge Management: Role of Human Resources Management, *Journal of Knowledge Management,* 4(4), 337-345.

Song, J.H. (2008), The Effects of Learning Organization Culture on the Practices of Human Knowledge-Creation: An Empirical Research Study in Korea, *International Journal of Training and Development*, 12(4), 265-281.

Sydanmaanlakka, P. (2002), An Intelligent Organization: Integrating Performance, Competence and KM, West Sussex, Capstone Limited.

Tippins, M. *(*2003), Implementing Knowledge Management in Academia: Teaching the Teachers, *The International Journal of Educational Management,* 17(7), 339-345.

Wah, L. (1999), Making Knowledge Stick, *Management Review,* 88(5), 24 – 29.

Wiig, K. (1997), Knowledge management: Where did it come from and where will it go? *Journal of Expert Systems with Applications*, Special Issue of Knowledge Management, 13(1).

Wong, K.Y. (2005), Critical Success Factors for Implementing Knowledge Management in Small and Medium Enterprises, *Industrial Management & Data Systems*, 105(3), 261-279.

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