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Knowledge Management Practices in Higher Learning Institutions in Sarawak

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ABSTRACT

This is a cross-sectional survey study designed to explore the views of lecturers in three higher education institutions in Kuching on knowledge management practices in their organizations. The three higher education institutions were Universiti Malaysia Sarawak (UNIMAS), MARA University of Technology Sarawak (UiTMCS) and Swinburne University of Technology Sarawak Campus. Questionnaires were used to collect data from the respondents regarding the importance lecturers attached to knowledge management and the levels of knowledge management implementation in the higher education institutions. The findings revealed that most of the lecturers at the higher education institutions felt that knowledge management was important and the lecturers placed the levels of knowledge management implementation at their institutions as moderate. There was a significant but weak positive relationship between importance attached to knowledge management and knowledge management implementation. Findings also revealed that there were significant differences in the importance attached to knowledge management based on the lecturers' gender and levels of education and a significant difference in the perceived levels of knowledge management implementation based on gender. However, there was no significant difference in the perceived levels of knowledge management implementation based on the lecturers' level of education.

Introduction

Today's economy is fundamentally different from the past. The Industrial Age has been supplanted by the Information Age (Stewart, 1997). The wealth of a nation no longer depends on its ability to acquire and convert raw material, but on the abilities and intellect of its citizens and the skills with which organizations harness and develop those abilities. The success of organizations depends on their ability to operate in a fast moving and global marketplace where customers are increasingly knowledgeable, have a rich landscape of choice and where the relationships between supplier and client are constantly evolving (LIC/TFPL, 1999). Davenport and Prusak (1998) define knowledge as a fluid mix of experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experience and information. It originates and is applied in the mind of the knower. Knowledge-based resources include all the intellectual abilities and knowledge possessed by employees, as well as their capacity to learn and acquire more knowledge. Thus, knowledge-based resources include what employees have mastered well as their potential for adapting and acquiring new information (Jackson, Hitt, & DeNisi, 2003). Knowledge management is a significant factor in an organization's ability to gain competitive advantage and be commercially effective. Environmental pressures, globalization, customer demands, and the urgent need to innovate have led organizations to seriously consider the implementation of knowledge management. Sveiby (1997) defines knowledge management as, 'the art of creating value from an organization's tangible assets'. Hofer-Aleis (1996, cited in Sveiby, 1997) believes that knowledge management is the systematic and explicit management of policies, programs, practices and activities in the organizations, involving sharing, creating and applying of knowledge. The management of knowledge aims to enhance existing knowledge, its networking and reuse and also to enhance new knowledge and the ability to innovate. Bollinger and Smith (2001) believe that it is important to develop a mechanism for tapping into the collective intelligence and skills of employees in order to create a greater organizational knowledge base. Knowledge management is vital not only in the business world but for all organizations. Universities and other higher education institutions are also in the knowledge business, and increasingly they are exposed to marketplace pressures in a similar way to other businesses (Goddard, 1998). For example, boards of trustees and senior leaders in higher

educational institutions are pressured to run higher education “like a business” with profit/loss statements and improved returns on investments. Tenure is being challenged with nonacademic leaders referring to tenure as an immoral business practice; with a mandate for faculty to be unaccountable to the customers they serve (Carlin, 1999). Knowledge management in higher education institutions refers to the activities of acquiring, creating, storing, developing and organizing intellectual capital to achieve the objectives of the organization.

Purpose of the Study

Knowledge management is one of the key factors to success in an organizational setting. Knowledge Management is important not only in business but also in educational organizations. In the context of higher education institutions, these institutions also need to practice knowledge management to enhance the efficacy of their courses, degrees and research. Thus, this study will look at the importance lecturers attach to knowledge management, their level of knowledge management implementation, the relationship between the importance attached to knowledge management and level of knowledge management implementation, and differences in knowledge management implementation based on gender and educational level.

Research Objectives

Specifically, the objectives of the study are to:

- elucidate the importance lecturers attach to knowledge management.
- identify the levels of knowledge management implementation in the higher education institutions.
- determine the relationship between importance attached to knowledge management and knowledge management implementation.
- elucidate the differences in the importance attached to knowledge management based on gender and educational levels.
- elucidate the differences in levels of knowledge management implementation based on gender and educational levels.

Limitation of the Study

The study was conducted in only three higher education institutions in Kuching. Thus the findings of this study might not accurately represent the knowledge management practices of universities in Malaysia.

Literature Review

Knowledge Management and Higher Education Institutions

Rowley (2000) states that universities and their staff must recognize and respond to their changing role in a knowledge-based society. Universities have a significant level of knowledge management activities, and it is important to recognize and use them as foundations for further development. Both public and private universities play important roles in giving easy access to knowledge especially to their students. For example, implementing Web-based learning, for both public and private universities, can be considered as part of the knowledge management initiatives. The future of corporate universities will include more Web-based learning, as well as a challenge to keep current with advancing technology and accreditation, while evaluation of programs will become more important to ensure the credibility and legitimacy of corporate universities (Nixon & Helms, 2002). University knowledge needs differ from corporate needs in that a university seeks to share scholarly knowledge for the good of society whereas corporations seek a profit. However, it is also important to note that universities have begun to manage knowledge as intellectual property to be sold or bartered, as well as given away (Kennedy, 1998). Koch, Paradice, Chea, and Guo (2002) had identified administrative support techniques that can encourage the development of knowledge management in universities. Their recommendations include: developing adequate retention policies to retain intellectual capital embedded in employees; improving quality through personal feedback; encouraging experimentation; and accessing knowledge on a person to person basis before consulting an explicit knowledge source.

Importance Attached to Knowledge Management by Lecturers

Boer, Baalan, and Kumar (2002) discussed the degree of knowledge sharing for academicians in the universities based on the knowledge sharing model theory by Fiske (1991). Universities are expected to be places where knowledge is shared freely among academicians, but the reality demonstrates that knowledge sharing is hardly present within universities. This situation shows that academicians acknowledged the importance of knowledge sharing in the knowledge management practice. In day-to-day activities of academics, knowledge is commonly shared with colleagues. Only when they have acquired valuable knowledge from colleagues, will they share similar knowledge with them and vice versa. Regularly, academics feel more cohesiveness with the peers who are working on their own research topic than with people from unrelated departments or with the entire universities.

Levels of Knowledge Management Implementation

In the value chain of knowledge management suggested by Hilse (2000), a five-stage model breaks up the traditional continuum of knowledge processing where academics (lecturers and experts) are still mostly regarded as being responsible for the whole process, from generating the knowledge (usually by personal research) to its distribution either by teaching or in the form of printed material such as books or articles. It emphasizes the roles that a lecturer or academician can play in knowledge management. The implementation of knowledge management by a lecturer may consist of knowledge creation, knowledge processing, knowledge storing, marketing of knowledge, and selling of knowledge. Figure 1 illustrates a value chain of knowledge management by Hilse (2000).

Gender and Knowledge Management

Does gender make a difference in knowledge management? Sveiby and Simons (2002) studied the effect of gender on perceptions of knowledge-sharing climate in a variety of public and private sector organizations in three separate areas in Australia, North American/Canadian, and large Asia Pacific and Scandinavian countries. The findings reported that gender has no impact on the perceptions of knowledge-sharing climate.

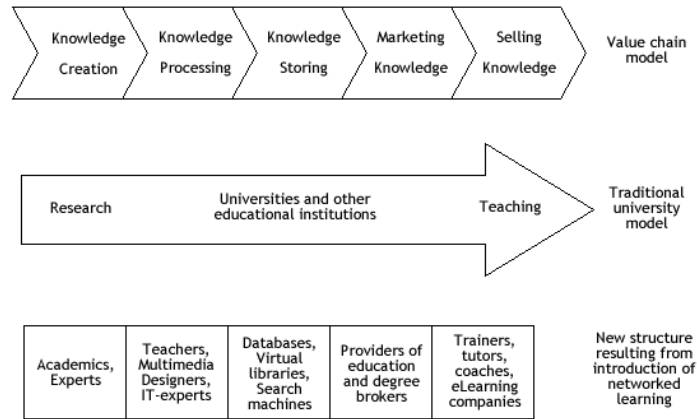


Figure 1: Value Chain of Knowledge Management by Hilse (2000)

Tare (2003) investigated whether there was a possible association between the gender of the responsible individual and the degree of implementation of knowledge management by companies in the Australian states of Victoria and New South Wales. The results also showed that gender has no impact on implementation of knowledge management. However, in a study at four universities in Canada involving 126 respondents on employees' perception toward knowledge-sharing cultures, Connelly and Kelloway (2003) reported that gender interacted with the perceived social interaction culture with respect to the knowledge-sharing culture. Women who reported a positive social interaction culture were much more likely to perceive themselves as having a knowledge-sharing culture in their organizations. Female employees may have been conditioned to be helpful, but given their frequently less-advantaged positions in many organizations, they may be hesitant to share with colleagues if they believed that they would be sharing away their power. A positive social interaction culture might allow female employees to forge a trusting working environment with their colleagues that allows knowledge-sharing to take place. The diversity of the work environment may also be an issue. For example, a male engineer who works with other male engineers may have different knowledge-sharing experiences than a female engineer who works with male engineers. If knowledge sharing is most likely to occur among friends, and employees are most likely to become friends with similar others (e.g. of the same gender), then employees of a minority gender may be less likely to share knowledge freely (Connelly & Kelloway, 2003).

Educational Levels and Knowledge Management

Sveiby and Simons (2002) reported that employees in public and private organizations in Australia, North American/Canadian, and large Asia Pacific and Scandinavian countries with higher levels of education found it easier to access knowledge and they could easily interpret shared knowledge. They also found that the knowledge-sharing climate improved with age and managerial role. Tare (2003) similarly concluded that the more highly qualified the employees, the more likely they are to be aware of, to appreciate and to implement knowledge management strategies, processes, and initiatives. However Tare (2003) also mention that 38 other studies failed to reveal further significant relationships, or even strong tendencies, so on balance, it might be prudent to uphold the null hypothesis and leave it for future research to take a closer, more detailed look at these issues. For example, Ajiferuke (2003) reported that demographic variables such as educational background did not have any relationship with involvement in knowledge management programs in his study on information professionals in Canadian organizations.

Methodology

This study used a cross-sectional survey research design. It is a quantitative study using questionnaires to collect data. The items in the questionnaires were asked in a prearranged order and required the respondents to select from a predetermined set of responses.

The sample in this study consisted of 108 lecturers from three higher education institutions in Kuching, Sarawak, namely Universiti Malaysia Sarawak (UNIMAS), Universiti Teknologi MARA Sarawak and Swinburne University of Technology Sarawak Campus. UNIMAS is the eighth public university in Malaysia and is located in Kota Samarahan, the administrative centre of Samarahan Division. It is linked to Kuching City via a modern 25km highway, a 30 minutes drive from the city centre. It offers programs from bachelor to PhD and also offers a unique environment for teaching, learning and research activities. Universiti Teknologi MARA Sarawak is located at Kota Samarahan. It is a branch campus of Universiti Teknologi MARA. It offers 28 programs ranging from diploma to PhD level through various modes, such as full-time, off-campus and e-PJJ (distance learning). Swinburne University of Technology Sarawak Campus is an international branch campus of

Swinburne University of Technology, Melbourne, Australia. The Sarawak Campus was set up in Kuching in 2000, and operates in partnership with the Sarawak Foundation and the Sarawak Higher Education Foundation. It offers undergraduate degrees in engineering, business, Information Technology and multimedia and post graduate research program at the PhD and Masters Levels.

The questionnaire consisted of three sections. Section A consisted of eight questions measuring the respondent's demographic information such as gender, and age. Section B had 12 questions on the degree of importance attached to knowledge management. Section C consisted of 12 questions measuring knowledge management implementation. Section B and Section C consisted of questions with Likert scale responses to indicate the respondent's agreement to each of the statements. The questions in Section B and Section C were adapted from the questionnaire used by Tare (2003). Examples of questions and choices in section B and section C are shown below:

Section B: Degree of importance attached to knowledge management

Q7: Top management and senior management support a culture of knowledge management

NI	SI	MI	I	EI
1	2	3	4	5

Note: NI = *Not Important*, SI = *Slightly Important*, MI = *Moderately Important*, I = *Important*, and EI = *Extremely Important*

Section C: Degree of knowledge management implementation

Q2: A budget is in place for knowledge management initiatives

NAA	S	M	I	HI
1	2	3	4	5

Nte: NAA = *Not at all*, S = *Slightly*, M = *Moderately*, I = *Implemented*, and HI = *Highly Implemented*

The researcher first sought permission to conduct research at the three higher education institutions. Once the institutions gave the required

permission, the researcher met with the representatives of each of the institutions who assisted in distributing, and administering the questionnaires. The researcher personally delivered the questionnaires to the representatives and briefed him or her regarding the research and administration of the questionnaires. The questionnaires were collected after one month. The data collection was carried out between May 29th and June 26th, 2006. Data collected was analysed using SPSS version 11.0 utilising frequencies, means, standard deviations, Pearson correlations, Independent t-tests and One-Way ANOVAs.

Findings

A total of 108 respondents took part in this study. Female respondents made up 63.9% of the respondents compared to 36.1% male respondents. The respondents were generally aged between 25-35 years old (82.4%) while another 16.7% of them were aged between 36-45 years old. Most of respondents had master level qualification (63%) followed by bachelor degree (30.5%). Only 6.5% of respondents had doctorate degrees. The majority of the respondents (75%) have worked for their organization for a period of less than 5 years. Some 20.4% of the respondents had worked for 6-10 years, and 4.6% of them had worked for 11-15 years with their organization. More than half of the respondents (56.5%) came from public higher educational institutions with 43.5% of them from private higher educational institutions. The profile of the 108 respondents are shown in Table 1. Based on the responses from the 108 respondents, the computed Cronbach Alpha's values for Section B and Section C of the questionnaire were 0.832 and 0.872 respectively. These values indicated that the questionnaire was reliable.

Importance Attached to Knowledge Management

Table 2 shows the percentages, means, and standard deviations of the degree of importance the respondents attached to various aspects of knowledge management. Generally, lecturers felt that knowledge management was important (overall mean scores = 4.039, standard deviation = 0.469) for the organizations. The respondents attached high importance to Information Technology System (mean, $M = 4.380$, standard deviation, $SD = 0.637$), followed by knowledge sharing ($M = 4.278$, $SD = 0.667$), and the use of technology for information access ($M = 4.269$,

Table 1: Profile of the Respondents

Characteristics	N	Percentage
Gender Males	39	36.1%
Females	69	63.9%
Age 25 – 35	89	82.4%
36 – 45	18	16.7%
46 – 55	0	0.0%
56 – 65	1	0.9%
Educational Qualification Bachelor Degree or lower	33	30.5%
Master Degree	68	63.0%
Doctor of Philosophy (PhD)	7	6.5%
Number of years in organization		
5 years and below	81	75.0%
6 – 10 years	22	20.4%
11 – 15 years	5	4.6%
More than 15 years	0	0.0%
Types of institutions Public	61	56.5%
Private	47	43.5%

SD = 0.664). In fact, knowledge sharing was part of the training and development activities within the organization ($M = 4.278$, $SD = 0.667$). They believed that knowledge management existed in their organizations ($M = 3.861$, $SD = 1.009$) and was central to their organizations' strategic plan ($M = 4.111$, $SD = 0.765$) to gain a competitive edge over other organizations ($M = 4.150$, $SD = 0.681$). The management of their organizations supported a culture of knowledge management ($M = 4.028$, $SD = 0.791$) and innovation was required for knowledge management ($M = 4.083$, $SD = 0.750$). Although the respondents agreed that the following aspects of knowledge management were important, they were ranked lowest: covering the encouragement of informal networks in the organization ($M = 3.694$, $SD = 0.901$), providing fast feedback to assist employees' learning ($M = 3.722$, $SD = 0.874$), and having time for creative thinking ($M = 3.815$, $SD = 0.929$).

Levels of Knowledge Management Implementation

As shown in Table 3, lecturers at the higher education institutions generally felt that knowledge management was moderately implemented in their organization (overall mean scores = 3.412, standard deviation = 0.544).

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Table 2: Importance Attached to Knowledge Management

Questions	NI	SL	MI	I	EI	Mean	S.D.
Q1 – A general understanding of knowledge management exists throughout the organization	3 (2.8%)	7 (6.5%)	24 (22.2%)	42 (38.9%)	32 (29.6%)	3.861	1.009
Q2 – Knowledge management is central to the organization's overall strategy	1 (0.9%)	0 (0.0%)	20 (18.5%)	52 (48.1%)	35 (32.4%)	4.111	0.765
Q3 – The organization encourages knowledge sharing	0 (0.0%)	1 (0.9%)	10 (9.3%)	55 (50.9%)	42 (38.9%)	4.278	0.667
Q4 – Informal networks across the organization are encouraged	4 (3.7%)	7 (6.5%)	20 (18.5%)	64 (59.3%)	13 (12.0%)	3.694	0.901
Q5 – The Information Technology system is considered vital	0 (0.0%)	0 (0.0%)	9 (8.3%)	49 (45.4%)	50 (46.3%)	4.380	0.637
Q6 – It is important that the organization benefits from knowledge management by gaining competitive advantage	0 (0.0%)	1 (0.9%)	15 (13.9%)	59 (54.6%)	33 (30.6%)	4.150	0.681
Q7 – Top management and senior management support a culture of Knowledge Mgmt	1 (0.9%)	2 (1.9%)	20 (18.5%)	55 (50.9%)	30 (27.8%)	4.028	0.791
Q8 – Ability of knowledge sharing is part of the training and developmental activities	1 (0.9%)	0 (0.0%)	17 (15.7%)	62 (57.4%)	28 (25.9%)	4.074	0.706
Q9 – Employees are provided with immediate feedback to help their own learning	1 (0.9%)	5 (4.6%)	39 (36.1%)	41 (38.0%)	22 (20.4%)	3.722	0.874
Q10 – Technology is used to ensure that required information is available to the employees	0 (0.0%)	0 (0.0%)	13 (12.0%)	53 (49.1%)	42 (38.9%)	4.269	0.664

Continued

Cont'd Table 2: Importance Attached to Knowledge Management

Questions	NI	SL	MI	I	EI	Mean	S.D.
Q11 – It is important that the organization benefits from knowledge management by higher level of innovation	0 (0.0%)	3 (2.8%)	17 (15.7%)	56 (51.9%)	32 (29.6%)	4.083	0.750
Q12 – Time is allowed for creative thinking	2 (1.9%)	7 (6.5%)	25 (23.1%)	49 (45.4%)	25 (23.1%)	3.815	0.929
Overall						4.039	0.469

Note: NI = “Not Important”, SI = “Slightly Important”, MI = “Moderately Important”, I = “Important”, and EI = “Extremely Important”

Although certain aspects of knowledge management implementation were perceived to be at the moderate levels, the first four highest ranks were access to information (M = 3.704, SD = 0.714), access to information was in compliance with regulatory framework (M = 3.546, SD = 0.766), recording and sharing of information (M = 3.528, SD = 0.891), and the application of knowledge management in the business process (M = 3.500, SD = 0.755). At the implementation level, it was perceived that knowledge was only moderately disseminated in the organizations (M = 3.407, SD = 0.798). Employees were at times praised (M = 3.454, SD = 0.951) and rewarded (M = 3.426, SD = 0.899) for work on knowledge management. They were not always brought together to offer different approaches to thinking and working in the organizations. The lowest three levels of knowledge management implementation were how senior management review knowledge management implementation (M = 3.185, SD = 0.908), availability of funds for knowledge management initiatives (M = 3.259, SD = 0.921), and creation of new core competencies (M = 3.287, SD = 0.865).

Relationship between Importance Attached to Knowledge Management and Levels of Knowledge Management Implementation

A Pearson Moment Correlation analysis was carried out to determine the relationship between importance attached to knowledge management and levels of knowledge management implementation. The r – value was 0.342 with p – value <0.0005. Thus, according to the criteria

Table 3: Levels of Knowledge Management Implementation

Questions	NI	SL	MI	I	EI	Mean	S.D.
Q1 – Knowledge Management is applied in the business process generally	0 (0.0%)	12 (11.1%)	35 (32.4%)	56 (51.9%)	5 (4.6%)	3.500	0.755
Q2 – A budget is in place for knowledge management initiatives	0 (0.0%)	26 (24.1%)	37 (34.3%)	36 (33.3%)	9 (8.3%)	3.259	0.921
Q3 – There is no restrictions placed on access to information unless it is confidential or personal	0 (0.0%)	4 (3.7%)	36 (33.3%)	56 (51.9%)	12 (11.1%)	3.704	0.714
Q4 – Knowledge is effectively disseminated through set procedures and formal networks	1 (0.9%)	13 (12.0%)	40 (37.0%)	49 (45.4%)	5 (4.6%)	3.407	0.798
Q5 – Use of knowledge and information is controlled in line with regulatory and compliance requirements	0 (0.0%)	10 (9.3%)	37 (34.3%)	53 (49.1%)	8 (7.4%)	3.546	0.766
Q6 – Recording and sharing knowledge is routine	3 (2.8%)	7 (6.5%)	41 (38.0%)	44 (40.7%)	13 (12.0%)	3.528	0.891
Q7 – Employees are praised for their exemplary work in KM	4 (3.7%)	10 (9.3%)	40 (37.0%)	41 (38.0%)	13 (12.0%)	3.454	0.951
Q8 – Intellectual capital is rewarded in the organization	1 (0.9%)	15 (13.9%)	41 (38.0%)	39 (36.1%)	12 (11.1%)	3.426	0.899
Q9 – Senior management reviews the effectiveness of KM to the whole organization on a regular basis	4 (3.7%)	22 (20.4%)	34 (31.5%)	46 (42.6%)	2 (1.9%)	3.185	0.908
Q10 – New core competencies are created	2 (1.9%)	16 (14.8%)	46 (42.6%)	37 (34.3%)	7 (6.5%)	3.287	0.865
Q11 – Employees are brought together from different divisions to offer different approaches to thinking and working	3 (2.8%)	6 (5.6%)	51 (47.2%)	46 (42.6%)	2 (1.9%)	3.352	0.740
Q12 – The organization has formalized the process of transferring best practices	3 (2.8%)	16 (14.8%)	40 (37.0%)	44 (40.7%)	5 (4.6%)	3.296	0.878
Overall						3.412	0.544

Note: NAA = “Not at all”, S = “Slightly”, M = “Moderately”, I = “Implemented”, and HI = “Highly Implemented”

suggested by Borg and Gall (1989), there was a significant but weak positive relationship. Thus, if the lecturers attached higher importance to knowledge management, the chances are that the levels of knowledge management implementation within the organizations would be higher.

Differences in Importance Attached to Knowledge Management Based on Demographic Variables

Based on the independent t-test results shown in Table 4, there was a significant difference in the importance attached to knowledge management based on gender ($t = -4.180, p < 0.0005$). Female lecturers ($M = 4.170$) tended to attach more importance to knowledge management compared to male lecturers ($M = 3.806$).

Table 4: Independent t-test Results for Importance Attached to KM Based on Gender

	N	Mean	Std. Dev.	t	Df	p
Male	39	3.806	0.461	-4.180	106	<0.0005
Female	69	4.170	0.420			

Based on the One-Way ANOVA results shown in Table 5, there were significant differences in the importance attached to knowledge management based on the respondents' levels of education ($F = 3.309, p = 0.040$). Subsequently, a Tukey Post-Hoc analysis was carried out to determine the differences in the importance attached to knowledge management for the respondents' levels of education. The Tukey Post-Hoc results showed that lecturers with bachelor ($M = 4.121$) and Master ($M = 4.040$) qualifications placed more importance on knowledge management compared to those with PhD ($M = 3.631$).

Differences in Perceived Levels of Knowledge Management Implementation Based on Demographic Variables

Based on the independent t-test results shown in Table 6, there was a significant gender difference in the perceived levels of knowledge management implementation ($t = -2.312, p < 0.0005$). Female lecturers

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(M = 3.501) tended to perceive higher levels of knowledge management implementation in the higher education institutions than male lecturers (M = 3.254).

Based on the One-Way ANOVA results shown in Table 7, there were no significant differences in the perceived levels of knowledge management implementation based on educational levels (F = 1.731, df = 0.182).

Table 5: One-Way ANOVA Result on Importance Attached to KM Based on Educational Levels

	SS	df	MS	F	p
Between Groups	1.389	2	0.694	3.309	0.040
Within Groups	22.034	105	0.210		
Total	23.423	107			

Tukey Post Hoc Test Results

	N	Subset
PhD	7	3.631
Master	68	4.040
Bachelor degree	33	4.121

Table 6: Independent t-test Result on Perceived KM Implementation Based on Gender

	N	Mean	Std. Dev.	t	df	p
Male	39	3.254	0.616	-2.312	106	0.023
Female	69	3.501	0.481			

Table 7: One-Way ANOVA Results on Perceived KM Implementation and Based on Educational Levels

	SS	df	MS	F	p
Between Groups	1.010	2	0.505	1.731	0.182
Within Groups	30.627	105	0.292		
Total	31.637	107			

Discussion

The findings of this study suggest that lecturers at higher education institutions generally feel that knowledge management is important and that their institutions encouraged knowledge-sharing and the use of technology to ensure that information was available to lecturers. Training provided for lecturers also include knowledge sharing practices. These findings were similar to those reported by academicians in higher education institutions in the United Kingdom (Rowley, 2000). Academicians generally used technology tools to access public knowledge (including e-documents such as e-journals) and for communication through e-mail (Rowley, 2000). However, these organizations should encourage the use of informal networks for knowledge sharing. Efforts should also be made to improve the culture of knowledge management and innovation. Zheng (2005) concludes that organizational culture has the largest positive impact on knowledge management effectiveness, followed by organizational strategy and organizational structure. Steyn (2003) suggested that higher education institutions have to move from predominantly collegial network institutions with a limited international learner base or knowledge-base towards the creation of a shared, extensive, global knowledge base as well as promoting informal networks.

The study also showed that knowledge management was moderately implemented in higher education institutions. Practices of knowledge management include less restriction on access to information, sharing information and application of knowledge management at work except for confidential data. These findings were consistent with Hulse's model of knowledge management in academic organizations (Hulse, 2000) which suggests that knowledge management practices of lecturers should include knowledge creation, knowledge processing, storing, marketing of knowledge, and selling of knowledge. Management should review the effectiveness of knowledge management practices in the organization and reward success stories in knowledge management process and Intellectual Capital efforts. According to Campbell and Luchs (1997), strategies for effective implementation of knowledge management should include a clear definition of what knowledge needs to be achieved and what motivations must be created. Likewise, to promote group performance, knowledge sharing, and innovative thinking, the design of the compensation and rewards system should be carefully done. Performance appraisal must be based on evaluation of employees,

knowledge management practices and input for directing management efforts (Salleh Yahya & Goh, 2002).

Chong and Choi (2005) stressed that individuals in organizations have to know the importance of knowledge management in order to produce positive results in knowledge management implementation. This study reported a significant although weak positive relationship between the importance lecturers attached to knowledge management and knowledge management implementation. Similarly, Chowdhury (2005) in a study of knowledge management implementation in a top oil company in Malaysia reported that employees perceived knowledge management as important and this in turn motivated them to practice knowledge management. However, a study by Tare (2003) of companies in Victoria and New South Wales in Australia reported that there was no relationship between the act of acknowledging knowledge management and the act of implementing knowledge management. Furthermore, the importance attached to knowledge management by individuals was not a guarantee of successful knowledge management implementation. For example, in a study among South African IT industries, Sunnasee and Sewry (2003) reported that employees felt that knowledge management was important but did not translate this into practice.

This study also showed that gender and educational qualifications had an effect on lecturers' perceived importance of knowledge management. Female lecturers and those with master and bachelor qualifications attached more importance to knowledge management than males and those with Ph Ds. These findings contradicted the results of Sveiby and Simons' (2002) study of employees in public and private sectors organizations in Australia, North American, Pacific, and Scandinavian countries. They reported that gender has no impact on the perceptions of the knowledge sharing climate. Tare (2003) also states that 'one might conclude that the more highly qualified the people, the more likely they are to be aware, to appreciate, and to implement knowledge management strategies, processes, initiatives'.

This study reported a significant difference in the perceived knowledge management implementation based on gender but not for educational qualifications. Female lecturers perceived the levels of knowledge management in the organizations to be higher than their male counterparts. Detlor (2004) likewise, showed that gender influenced how people went about creating, finding, seeking, distributing and using information and knowledge in the firm. Detlor et al. (2006) also reported that males, older employees and those with professional designations

have positive perceptions of and attitudes towards the corporate knowledge management context and organizational level knowledge management practices. On the other hand, Tare (2003) reported that there was no relationship between gender and knowledge management implementation. Furthermore, Ajiferuke (2003) also stated that gender and age did not seem to have any relationship with involvement in knowledge management practices in Canadian organizations. Ajiferuke (2003) also reported that educational background did not affect knowledge management practices. However, Sveiby and Simons (2002) found that respondents with higher level of education found it easier to access and interpret shared knowledge.

Conclusion

In Malaysia, knowledge management is still in its infancy (Chowdhury, 2006). Few Malaysian organizations have initiated knowledge management programs. Nonetheless, the importance of knowledge management has been emphasized by the Minister of Human Resource, Datuk Dr Fong Chan Onn (Fong, 2001). Therefore, organizations in Malaysia and in particular institutions of higher learning should move towards implementing knowledge management to improve their capacity to compete, innovate and excel in the global markets. In addition, more research should be carried out to investigate the extent of the implementation and effectiveness of knowledge management in Malaysian organizations and institutions of higher learning.

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