

# KNOWLEDGE MANAGEMENT: AN EMPIRICAL SURVEY ON MALAYSIAN HIGHER EDUCATION

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**Abstract :** Knowledge Management (KM) gains more acceptance by organizations in search for competitive advantage. KM facilitates opportunistic application of fragmented knowledge through integration environment. As a new discipline, KM has been associated with innovation and competitiveness. This paper discusses the emerging discipline of KM in computing by reviewing KM literature. This research advocates on four KM antecedents, namely culture, information technology, organizational structure, and people. It also presents empirical findings based on survey at Malaysian universities. It is found that KM practices are at a moderate level among assessed organisations. This result is shown graphically in a radar chart. The last section gives an outlook on future trend and concludes the article.

**Keywords :** Multimedia Super Corridor, Knowledge Management, Knowledge Culture, Technology, Organisational Structure, People, Malaysian Universities

## 1. Introduction

Multimedia Super Corridor (MSC) is a planned region with the latest infrastructure, policies, and laws that enable firms to discover potential and benefit from the information age (Chuan and Abdulai, 2002). The MSC is a vehicle for the nation to leap into the IT era and transform Malaysia into knowledge-based economy (Chua, 2002). The corridor stretches from the Petronas Twin Towers to the new Kuala Lumpur International Airport (KLIA), covering a 15-by-50 km width area. Putrajaya, the new administrative capital of Malaysian government, is located at the heart of this newly developed region. Putrajaya is equipped with new electronic government mechanisms, state-of-the-art communications, and transportation systems (Chuan and Abdulai, 2002). The neighbouring multimedia city, Cyberjaya, offers highly intelligent buildings, multimedia enterprise offices, latest technology facilities, and excellent landscape for recreation (Chuan and Abdulai, 2002). The nucleus of Cyberjaya is the Multimedia University (MMU). The MSC region, the administrative capital city of Putrajaya, and the multimedia city of Cyberjaya have been fundamental in shifting Malaysia economy from technology-based era to knowledge-based era (Chuan and Abdulai, 2002).

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The MSC Malaysia status is a recognition by the Malaysian government through Multimedia Development Corporation (MDEC) for organisations that venture into ICT research and development activities in Malaysia. The MSC-certified firms have surged demands for knowledge workers and knowledge management practices (Goh, 2005). Malaysian universities are key players in producing knowledge workers, such as Multimedia University (MMU) at Cyberjaya, Universiti Putra Malaysia (UPM), Universiti Teknologi Mara (UiTM) and Universiti Tun Hussein Onn Malaysia (UTHM). These universities have centers, units, research interest groups that specifically focus on knowledge management field.

## 2. Knowledge Management

Gao (2008) stressed knowledge management as an essential mechanism to visualize knowledge so that it can create higher values. Knowledge management (KM) is increasingly recognized within corporate firms as a critical approach that can be harnessed to attain competitive position and superior performance (Uden *et al.*, 2007; Darroch, 2005; Gold *et al.*, 2001; Von Krogh *et al.*, 2000; Bontis, 1999). A growing number of firms have made KM activities, such as creating and transferring knowledge, as their most important business agenda (Chase, 1997). In Malaysia, organisations such as ON Semiconductor, Petronas, INTAN and Universiti Malaysia Pahang have initiated specific programmes to manage knowledge sharing and integration. Such a trend implies that there are increasing and strong interests in the systematic use of KM as a leveraging tool to attain a competitive edge in the past and current decades (Boder, 2006; Darroch and McNaughton, 2002; Gold *et al.*, 2001; Bennett and Gabriel, 1999; Nahapiet and Ghoshal, 1998; Davenport *et al.*, 1998; Skyrme and Amidon, 1997; Brooking, 1997; Lloyd, 1996). Many industrial leaders realize the significant value of 'knowing what they know' and maximising the usage of that knowledge, better known as 'corporate knowledge asset' (Malhotra, 2000). This is supported by Tasmin and Woods (2007) who coined the term 'corporate knowledge management'. O'Dell and Grayson (1998) stated that Lew Platt, then CEO of Hewlett-Packard said, "I wish we knew what we know at HP". Bhatt (1998) stated that some industrial managers assumed an effective KM can be achieved through means of managing technology. But, Bhatt stressed that KM also included managing both relation and interaction among employees within the organisation.

## 3. Antecedents of Knowledge Management Practices

Literature have shown various antecedents influencing success of knowledge management practices. According to Wong (2005), knowledge management

success factors must be addressed prior implementation of KM activities. Table 1 shows a summary of the reviewed antecedents for KM practices.

Table 1. Literature review on KM research antecedents

<b>Antecedents</b>	<b>Culture</b>	<b>Information Technology</b>	<b>Organisational Structure</b>	<b>People</b>
Sharifuddin, S.O. and Rowland (2004)	Organisational Culture	Technology	Organisational Structure	People/Human Resource
Kim and Lee (2004)	Organisational Culture	Information Technology	Organisation Structure	
Wong and Aspinwall (2005)	Culture	Information Technology		Training and Education
Gan (2006)	Culture	Information Technology	Structure	People
Akhavan <i>et al.</i> (2006)	Organizational structure	Experts Network	Organisation structure	Training Program
Kanagasabapathy <i>et al.</i> (2006)	Trust	Information System	Knowledge Culture	Training and Participation
Wei <i>et al.</i> (2006)			Organisation culture	K-team
Tasmin and Woods (2007)	Culture	Technology		
Proposed Antecedents	Culture	Information Technology	Organisational structure	People

Based on above KM literature, this study pursued an in-depth research by understanding KM practices based on the proposed antecedents, namely culture, information technology, organisational structure and people.

### 3. Knowledge Management Practices Research

The research applies a non-probability sampling technique. Non-probability sampling provides a range of alternative techniques to select samples based on subjective judgement (Saunders *et al.*, 2007). The collected data are presented and

analyzed with respect to the relevance of research objectives. One objective of this research is to gauge the extent of knowledge management antecedents existing in Multimedia Super Corridor certified organizations. The researchers had distributed questionnaires to 180 selected respondents but only 121 questionnaires were received from the respondents. A response rate of 67% which is a reasonable amount for technology-based and social science research (Tasmin, 2007). The respondents are employees and knowledge-based workers from Cosmopoint College, Open University, University of Malaysia Pahang (UMP), and IKIP College.

The analyses that were used by the researchers in order to analyze data were reliability test, descriptive and factor analyses. Statistical Package Social Science (SPSS) was used to analyze the collected data.

#### 4. Data Analysis

The researchers compiled the usable data and determined its reliability as shown in Table 2. The total number of questions is 36 as shown in the Appendix A.

Table 2. Reliability indices for each KM antecedent

Factors	Cronbach's Alpha ( $\alpha$ )	No. of Items	No. of Respondents
Cultural	0.779	10	121
Information Technology	0.857	7	121
Organization Structure	0.834	6	121
People	0.852	13	121
<b>Total</b>	<b>0.929</b>	<b>36</b>	

The value of Cronbach's Alpha for culture factor is 0.779, the Cronbach's Alpha value for information technology factor is 0.857, the value of Cronbach's Alpha for organization structure factor is 0.834, and the value of Cronbach's Alpha for people factor is 0.852. While the total value of Cronbach's Alpha for this research is 0.929, which means that the instrument reliability in this research is excellent. According to Hair *et al.* (2006), to ascertain test reliability we used Cronbach's Alpha, which measures the internal consistency of items. Cronbach's Alpha must be greater than 0.70. However, there are some references accepting values lower than 0.70.

##### 4.1. Feedback Rate

The feedback rate is the percentage of respondents who answered and returned the questionnaires that have been distributed. A total of 180 sets of questionnaires have been distributed to employees and knowledge-based workers in Cosmopoint College, OPEN University, UMP, and IKIP College. At a certain point,

researchers went to the MSC organizations and met with the person-in-charges to get permission to distribute questionnaires. Once the researchers got the permission to distribute questionnaires in particular organization, the researcher left the questionnaires in the related departments. The researchers started to distribute questionnaires on December 7th, 2008 and collected some of the questionnaires back by December 12th, 2008. Researchers completed collecting the entire questionnaires on 13 February 2009. The total set of 121 questionnaires managed to be collected. As many as 59 sets of questionnaires cannot be collected because the researchers had distributed them during semester breaks when most of people were on holiday.

#### 4.2. Demographic Analysis

Demographic analysis of respondents includes age, gender, job responsibility, number of years in the organization, years of working experience, and level of experience and familiarity with knowledge management.

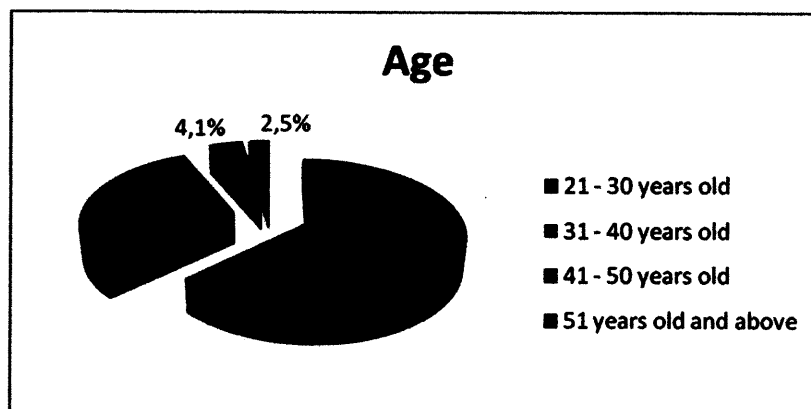


Figure 1. Age distribution of respondents

Based on figure 1, research analysis has shown that 62.8% of respondents are between the age of 21–30, followed by 30.6% of respondents are between 31–40, 4.1% of respondents are between 41–50, and 2.5% of respondents are 50 years old and above. It could be observed that there are many young employees working at these MSC-certified organizations. This implies that MSC certified organizations are more likely to hire young employees. Generally, it is believed that such a group has higher IT literacy level than their older counterparts.

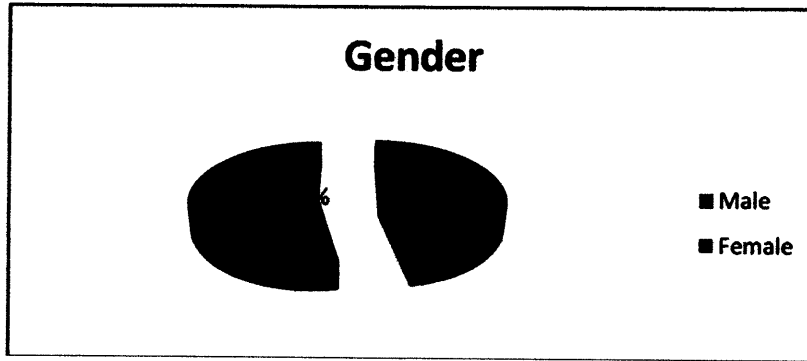


Figure 2. Gender distribution fo respondents

Figure 2 shows that 47% of respondents (57) are male and 53% respondents (64) are female. There is a slight difference between male and female respondents. It is believed that this does affect the application of knowledge management practices in MSC-certified organizations.

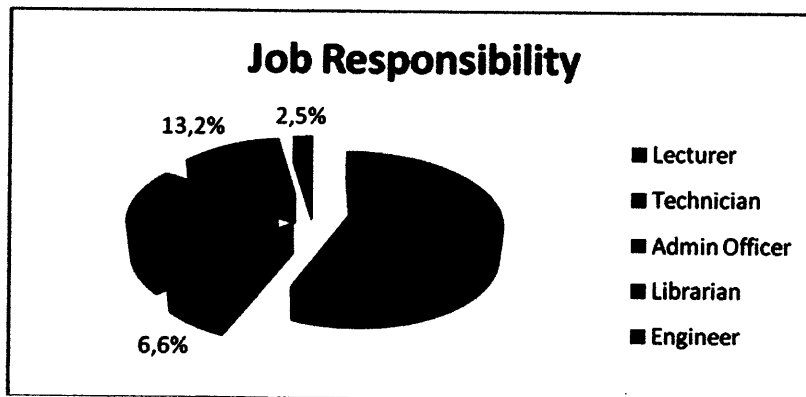


Figure 3. Job responsibility distribution of respondents

Figure 3 shows the job responsibility for the study. It shows that 56.2% of respondents (68) are lecturers, 21.5% of respondents (26) are administrative officers, librarians are 13.2% (16 respondents), technicians are 6.6% (8 respondents) and engineers are 2.5% (3). This distribution shows that most of the respondents are lecturers. Generally, it is accepted that these are the group of people who are mostly related to the knowledge management practices and their respective systems in organisations.

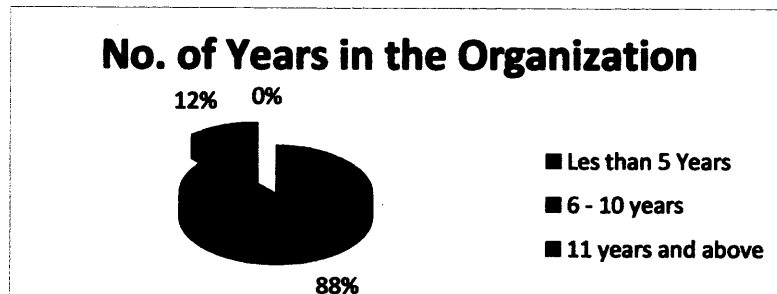


Figure 4. Respondents' distribution of number of years in the organizations

Figure 4 shows the number of years in the organization of respondent. Data shows that 88% of respondent (106 respondents) join the organizations less than 5 years and 12 % (15 respondents) respondent join the organizations between 6 – 10 years. There were no respondents whom joined the organizations for more than 11 years. This shows that most of the respondent just join the organization for less than 5 years.

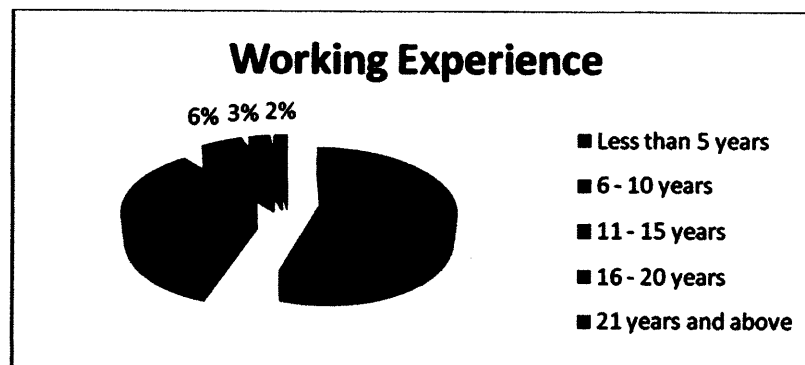


Figure 5. Respondent working experience distribution

Figure 5 shows the respondent working experience distribution. It shows that 55% which is 66 respondents have less than years working experience followed by working experience between 6 – 10 years 34% which is 41 respondents, working experience between 11 – 15 years 6% which is 7 respondents, working experience 16 – 20 years 3% which is 4 respondents, and working experience more than 21 years 2% which is 3 respondent. From the figure above can conclude that most of the respondents are new members which just graduate form school or university.

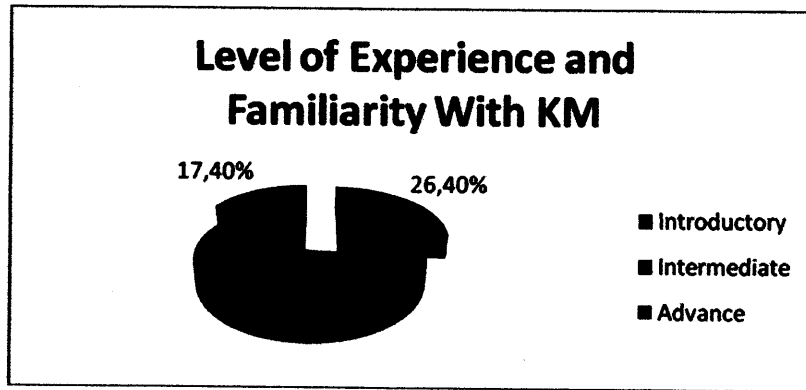


Figure 6. Level of experience and familiarity with KM distribution

The figure 6 shows the level of experience and familiar with KM distribution. The figure shows that most of the respondent in the intermediate level with KM which is 56.2% (68 respondents), it then followed by introductory level with KM which the percentages is 26.4% (21 respondents), and the advance level with KM only 17.4% which is 21 respondents only. From the figure above shows that most of the respondents are having intermediate level of experience. This is because most of the respondents have less than 5 years of working experience in the organization. Thus the level of experience and familiar with knowledge management is not so high.

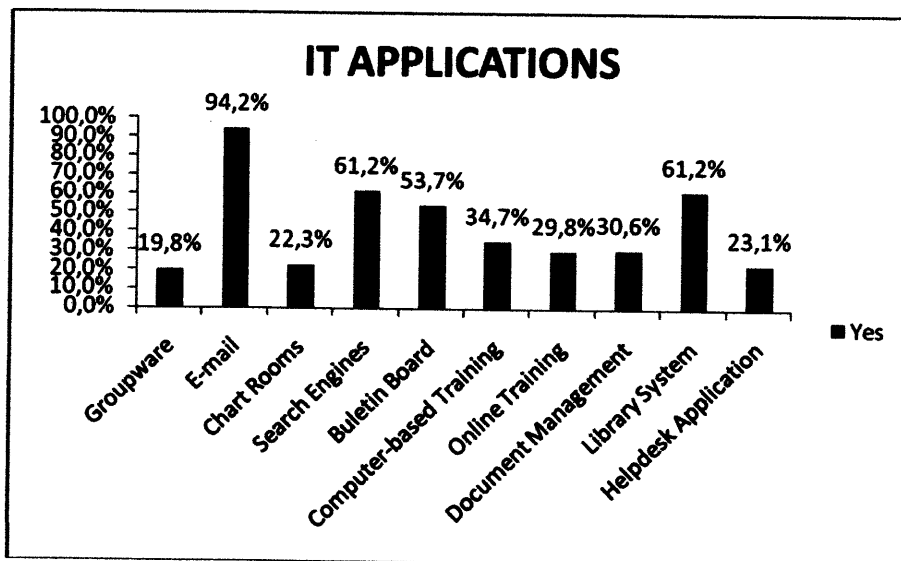


Figure 7. IT application distribution

Figure 7 shows the IT applications which support the knowledge management practices in respondent's organization. From the figure above, E-mail (94.2%) is the most famous IT application used by respondent to sharing their knowledge among employees. The second higher is 61.2% which represented by search engines and library system. The third higher is bulletin board which is 53.7%



followed by computer-based training (34.7%), document management which is 30.6%, online training which is 29.8%, helpdesk application (23.1%), chat rooms (22.3%), and groupware (19.8%). Respondent likes to use e-mail to share their knowledge because e-mailing is one of the easiest ways to transfer their knowledge. Respondents just need to write down the important point and send it to everyone else in the organization. That is the easier and faster way to transfer knowledge.

#### 4.3. Mean Score Distribution and Standard Deviation

The 5-point Likert scale is broken down into three ranges: namely low, medium, and high, to gauge the level of KM practices.

Table 3. KM practices level of extent

Extent	Range
Low	1.0 – 2.3
Medium	2.4 – 3.7
High	3.8 – 5.0

Adapted from Tasmin and Wood (2008).

Table 3 shows the extent level for the mean. This table helps researchers to measure the mean level of data for this research. From table 3, the extent for the mean between 1.0 – 2.3 is low, the extent for the mean between 2.4 – 3.7 is medium, and the extent for the mean between 3.8 – 5.0 is high.

Table 4. Extent for knowledge management's antecedents

Factors	Mean	Std Deviation	Extent
Culture	3.5033	0.47363	Medium
Informational Technology	3.6883	0.54242	Medium
Organization Structure	3.4411	0.57521	Medium
People	3.5149	0.48669	Medium

Table 4 shows the extent level for each knowledge management practice. The extent for the culture factor is medium, which has a mean of 3.5033 and a standard deviation of 0.47363. The extent for informational technology is medium, with a mean of 3.6883 and a standard deviation of 0.54242. The extent for organization structure is medium, with a mean of 3.4411 and a standard deviation of 0.57521. The extent for the people factor is also in the medium range, with a mean of 3.5149 and a standard deviation of 0.48669. The radar chart for the extent of knowledge management practices is shown in figures 8 and 9 below.

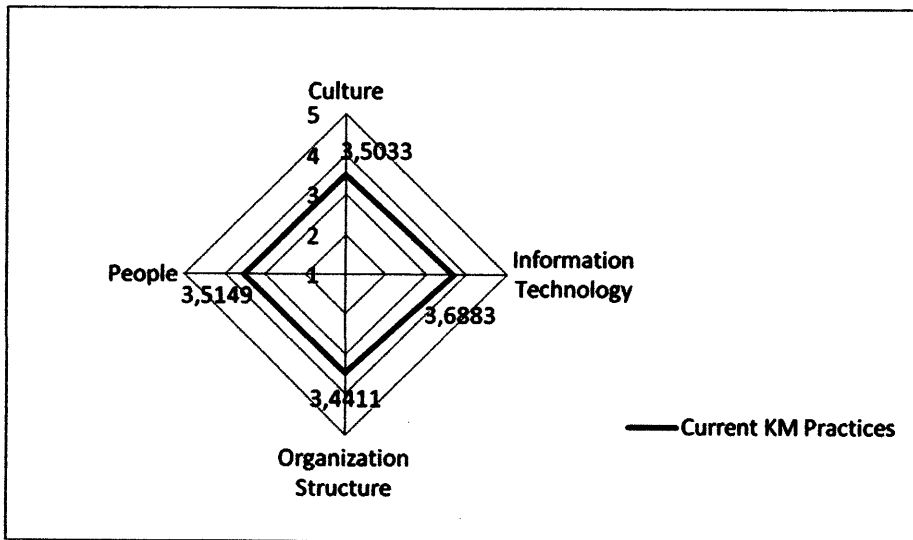


Figure 8. Overall view of KM radar chart

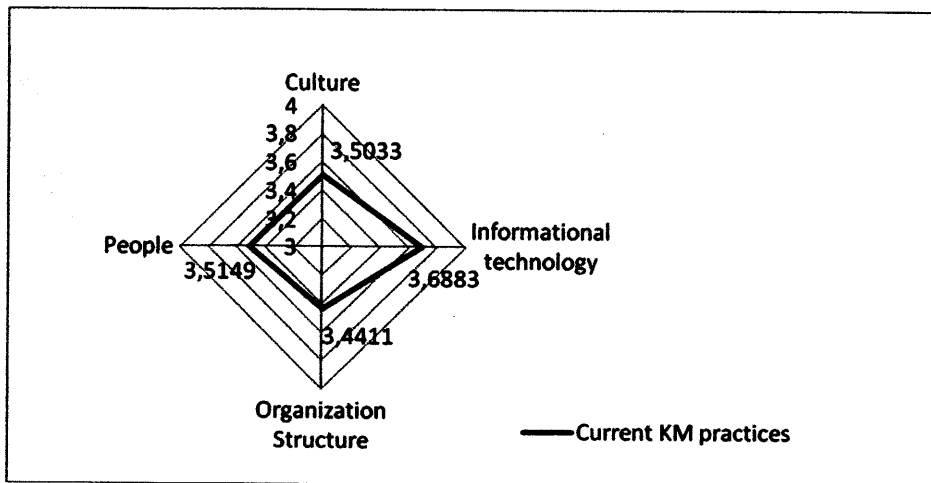


Figure 9. Close view of KM radar chart

It can be deduced from figure 8 and 9 that the extent of knowledge management practices at the Malaysian universities is at medium level. Since KM is at its infant stage in Malaysia, it is not surprising to find such moderate finding. Gaál *et al.* (2007) reported their findings of medium extent of KM practices in Hungary.

## 5. Summary and Conclusion

KM has been an essential management tool in realizing actual value of knowledge. It can also be used to facilitate in integrating fragmented knowledge exists in organisation. Through such integration, KM can deliver benefits to organizations, individuals, and society. Reviewing existing KM literature provides a thorough understanding KM important antecedents. These antecedents

are basic ingredients of knowledge management initiatives. It is clear from the study that KM practices are at a moderate level among several Malaysian universities. It can be deduced that information technology is treated as the main players in knowledge management practices. Many more need to be done, considering KM is at its growing stage. Future trends provide a foresight for KM to deliver its full potentials.

**Appendix A. Factor influencing knowledge management (Culture)**

No.	Culture	Mean	Std. Deviation	Tendency Level
3	Helpful members	3.87	0.763	Very High
2	Supportive members	3.80	0.726	Very High
7	Mutual trust in working towards organisational goals	3.65	0.667	High
5	Degree of trust	3.64	0.644	High
10	Encourage transfer of knowledge/experience	3.63	0.967	High
4	Willingness to collaborate	3.59	0.667	High
6	Mutual trust in intentions/behaviour	3.58	0.680	High
1	Degree of collaboration	3.57	0.751	High
8	Reward for practicing KM	2.88	1.074	Very Low
9	Ingrained practice of reward	2.82	1.088	Very Low

**Appendix B. Factor influencing knowledge management (IT)**

No	Information Technology	Mean	Std. Deviation	Tendency Level
12	Networks for transferring information	3.87	0.741	Very High
11	IT Infrastructure	3.74	0.770	Very High
17	Impact of IT Infrastructure	3.72	0.733	Very High
14	Communication support	3.65	0.782	High
13	Supporting Collaborative work	3.65	0.655	High
15	Searching and accessing support	3.60	0.689	High
16	Systematic storage	3.58	0.793	High

**Appendix C. Factor influencing knowledge management (Organizational Structure)**

No.	Organization Structure	Mean	Std. Deviation	Tendency Level
18	Degree of Centralisation	3.61	0.789	High

21	Written rules and procedure	3.55	0.827	High
22	Create formal procedure	3.50	0.787	High
20	Formal rules	3.46	0.796	High
19	Degree of formalisation	3.45	0.670	High
23	Formal ways to tie upper and bottom line	3.26	0.793	Medium

**Appendix D. Factor influencing knowledge management (People)**

No.	People	Mean	Std. Deviation	Tendency Level
27	Encourage attend seminars, conferences, symposia	3.72	.809	Very High
24	Degree of learning	3.69	.719	Very High
32	Specialist in own area	3.60	.724	High
28	Provide various programs	3.60	.713	High
35	Ability of performing task	3.56	.773	High
25	Provide various formal training programmes	3.55	.806	High
34	Communication ability	3.52	.786	High
29	Satisfaction with training or self-development	3.50	.685	High
31	Leaders possess individualised charisma	3.50	.838	High
33	Understanding of the task	3.46	.764	High
30	Guidance and motivation by Leaders	3.45	.866	High
26	Informal training programmes	3.42	.844	Medium
36	Develop "expert system"	3.13	1.118	Low

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