

## THE USE OF KNOWLEDGE MANAGEMENT TECHNOLOGY AMONG SELANGOR STATE GOVERNMENT AGENCIES

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### ABSTRACT

Knowledge management is one of the important things for the success of an organization. The state of Selangor, which is the first developed state in Malaysia since 2005, often being used as a benchmark by other states, including in terms of information technology implementation. This study has been conducted to identify the use of knowledge management technology among Selangor State government agencies. For this purpose, a quantitative study has been conducted by distributing questionnaire to the respondents from 10 Selangor State government agencies. Studies conducted show that knowledge management technology is part of the instruments used to assist governance in the government agencies of Selangor State. Besides, encouragement from management, related policies and even IT infrastructure are also available and support all information life cycle processes to run well in Selangor State government agencies.

**Keywords:** knowledge management, information management, information technology, knowledge management technology, Selangor State government agency.

### INTRODUCTION

In the era of knowledge-based economy, knowledge management activities become the most important asset to the success of an organization (David N. Abdulai, 2001). In line with these changes, on August 27th, 2005, the Selangor State government has declared Selangor as the first developed state in Malaysia in line with the development of the knowledge-based global economic system. To support this agenda, Selangor State government agencies began to implement a knowledge management system using various types of technology in accordance with its goal to make information technology and k-economy as a pillar of the Selangor State economy (Selangor, 2001).

After more than 10 years after the Selangor State government being declared as a developed state, it is appropriate to conduct a study to identify an efficient and systematic work culture related to the use of knowledge management technology (in this study is referring as information technology or IT) that has been used among Selangor State government agencies. This study involves all eight categories of knowledge management technology which are Internet, Intranet, Extranet, Data Warehousing, Document Management/Content Management, Decision Support System, Knowledge Agents and Groupware/E-Mail (KPMG Consulting, 2000) in those government agencies.

## KNOWLEDGE MANAGEMENT

Before defining knowledge management, knowledge itself needs to be defined first. It is very important to define knowledge because understanding of knowledge is the first step towards effective knowledge management (Allen, 1998).

Alavi and Leidner (1999) have defined knowledge as “a reasonable belief that enhances an individual’s ability to take effective action”. There are two types of knowledge that related to knowledge management, which are tacit knowledge and explicit knowledge. Tacit knowledge is knowledge acquired through experience, involvement and action, while explicit knowledge is knowledge acquired directly from formal learning and as a result of reference (Alavi and Leidner, 1999). Tacit knowledge is difficult to transfer to others simply through writing or presentation.

Defining knowledge management is often a challenge to the researchers in this field (Mokmin et al., 2019). Girard and Girard (2015) has claimed to identify more than 100 definitions of knowledge management that has been taken from academics, practitioners, government, profit-oriented and also non-profit-oriented organizations. Through various definitions being analyzed, finally Girard and Girard (2015) has proposed general definition of knowledge management as the process of creating, sharing, using and managing organizational knowledge and information.

Alavi and Leidner (1999), and Davenport and Glaser (2002) have defined knowledge management as “a specific and systematic framework for obtaining, acquiring, organizing and communicating an employee’s tacit and explicit knowledge so that other employees can use it in order to be more effective and productive in their work and maximize organizational knowledge”.

In short, knowledge management is all about how an organization can teach in the form of knowledge that is distributed and shared smoothly, systematically and efficiently across people, technologies and processes of an organization (Nurul Ibtisam et al., 2019).

## KNOWLEDGE MANAGEMENT COMPONENT

Dutta and Banerjee (2016) found that the knowledge management component can be divided into three, which are people, process and technology. According to Bhatt (2000), human beings are the key factor to the overall success of knowledge management implementation, which is the most difficult and complicated to handle. People component requires 70 percent of organizational effort, while the combination of process and technology components involves only 30 percent of effort.

Bhatt (2000) has claimed that the latest technology and best processes cannot guarantee the success of the knowledge management. However, Lauren (2015) who has conducted a study on 500 respondents found that smart technology can improve knowledge management. The findings of this study showed that 50 percent of organizations acknowledge that machine learning and cognitive computing will have an impact on their knowledge management programs.

Paul in Lauren (2015) said that technology from the start has always provided significant impact on knowledge management changes. However, Jennex and Olfman in Jennex (2019) has mentioned security as one of the critical success factor of knowledge management. They have suggested that in future, the knowledge management team should work with security team and law enforcement in order to create a secured way in sharing information across organizations and across geographic boundaries.

## KNOWLEDGE MANAGEMENT AND GOVERNMENT AGENCIES IN MALAYSIA

Since 1990s, many organizations in Malaysia have begun to apply knowledge management in their respective organizations towards more positive competition. The positive influence of knowledge management applications brought by large organizations such as Microsoft and Hewlett Packard (HP) into Malaysia has introduced knowledge management and opened the eyes of other organizations in Malaysia regarding the needs and benefits of knowledge management applications (Chowdry in Fiaziah, 2009).

Syed Omar Sharifuddin and Rowland (2004) have studied the availability of knowledge management strategies in public organizations in Malaysia. This study also examined perceptions of the benefits, problems, responsibilities and aspects of technology required to manage knowledge in an organization. It discussed issues that encourage and restrict knowledge generation and knowledge sharing. The Ministry of Entrepreneur Development and Cooperatives Malaysia (MEDAC) has been selected as the study location. Questionnaire was used as the main instrument in collecting data and a total of 154 respondents were involved in the study. This study has revealed that knowledge in MEDAC can be found in the Ministry's procedures and policies, work manual procedures, ISO 9002, table files, workflows and databases.

### METHODOLOGY

This study used a quantitative approach by conducting a survey methodology. The questionnaire has been developed together with expert cum professor from Kulliyah of Information and Communication Technology, International Islamic University Malaysia (IIUM).

Subsequently a pilot study was conducted to determine the reliability of the developed instrument. A total of 10 copies of questionnaire have been distributed to lecturers of Faculty of Science and Information Technology, Kolej Universiti Islam Antarabangsa Selangor (KUIS) in conducting a pilot test. The reliability of the questionnaire has been obtained by using the subject, which was those lecturers comprises of 4 males and 5 females.

A total of 10 Selangor State government agencies have been involved in this study as shown in Table 1. There were 2,677 employees in these agencies. Sampling technique being used is based on the table for determining sample size from a given population by Krejcie and Morgan (1970). Based on the table, a total of 335 employees has been decided as a sampling size. A total of 500 copies of questionnaire have been distributed and a total of 236 were successfully returned. The collected data then has been analyzed by using Statistical Package for the Social Science (SPSS) software application.

The questionnaire was divided into four sections: (a) items on the demographic information of the respondents, (b) items in identifying the use of knowledge management technology usage in Selangor State government agencies, (c) items in identifying problems related to the use of knowledge management technology of Selangor State government agencies, and (d) items in identifying the culture related to the use of knowledge management technology on the progress and change of culture to the Selangor State government agencies. The focus of this paper will be on discussing the findings on section (a) and (b).

TABLE 1. Total of Study Sample

Government Agency	Sample
Perbadanan Perpustakaan Awam Negeri Selangor (PPAS)	23
Majlis Agama Islam Selangor (MAIS)	23

Lembaga Zakat Selangor (LZS)	45
Perbadanan Wakaf Selangor (PWS)	5
Lembaga Perumahan dan Hartanah Selangor (LPHS)	13
Perbadanan Adat Melayu dan Warisan Negeri Selangor (PADAT)	12
Pejabat Lembaga Urus Air Negeri Selangor (LUAS)	11
Majlis Sukan Negeri Selangor (MSNS)	7
Perbadanan Kemajuan Pertanian Negeri Selangor (PKPS)	5
Perbadanan Kemajuan Negeri Selangor (PKNS)	92

## FINDINGS AND DISCUSSION

The mean score interpretation table used is by Landell (1997) as shown in Table 2. To ease the understanding, the findings of this study are presented based on the 4 main activities of the information life cycle, which consists of knowledge discovery, knowledge capturing, knowledge sharing and knowledge application.

TABLE 2. Mean Score Interpretation

Total Mean Score	Level
1.00 - 2.33	Low
2.34 - 3.67	Moderate
3.68 - 5.00	High

Sumber: Landell (1997)

Table 3 shows the demographic information of all the respondents. In total of 236 respondents, 23 (9.7%) of respondents were from Perbadanan Perpustakaan Awam Negeri Selangor (PPAS), 23 (9.7%) of respondents were from Majlis Agama Islam Selangor (MAIS), 45 (19.1%) of respondents were from Lembaga Zakat Selangor (LZS), 5 (2.1%) of respondents were from Perbadanan Wakaf Selangor (PWS), 13 (5.5%) of respondents were from Lembaga Perumahan dan Hartanah Selangor (LPHS), 12 (5.1%) of respondents were from Perbadanan Adat Melayu dan Warisan Negeri Selangor (PADAT), 11 (4.7%) of respondents were from Pejabat Lembaga Urus Air Negeri Selangor (LUAS), 7 (3.0%) of respondents were from Majlis Sukan Negeri Selangor (MSNS), 5 (2.1%) of respondents were from Perbadanan Kemajuan Pertanian Negeri Selangor (PKPS), while 92 (39.0%) which was the highest frequency of respondents were from Perbadanan Kemajuan Negeri Selangor (PKNS). As for age of respondents, 3 (1.3%) respondents were between 18 to 21 years old, 36 (15.3%) respondents were between 22 to 30 years old, 120 (50.8%) which was the majority respondents were 31 to 40 years old, 55 (23.3%) respondents were 41 to 50 years old, while 22 (9.3%) respondents were 51 to 60 years old. Regarding gender, 101 (42.8%) respondents were male, while 135 (57.2%) which was the majority respondents were female. As for the race, 233 (98.7%) which was the majority respondents were Malay, 1 (0.4%) respondent was Chinese, while 2 (0.8%) respondents were other races. Regarding the service duration, 39 (16.5%) respondents were between 1 to 2 years, 47 (19.9%) respondents were between 3 to 5 years, 61 (25.8%) respondents were between 6 to 10 years, 77 (32.6%) which was the highest respondents were between 11 to 20 years, while 12 (5.1%) respondents were between 21 years of service and above. As for the educational level, 18 (7.6%) respondents were SPM level, 40 (16.9%) respondents were Diploma level, 43 (18.2%) respondents were Bachelor Degree level, 119 (50.4%) which was the highest

respondents were Master Degree level, 13 (5.5%) respondents were Doctoral Research Degree level, while 3 (1.3%) respondents were other educational level. Regarding the service scheme type, 7 (3.0%) respondents were integrated scheme, 90 (38.1%) respondents were executor scheme, while 139 (58.9%) which was the highest respondents were management and professional scheme. As for the computer use at the workplace, 221 (93.6%) which was the highest respondents were using computer, 14 (5.9%) respondents were not using computer, while 1 (0.4%) was not sure of using computer at the workplace. Regarding the computer using experience, 105 (44.5%) which was the highest respondents were between 1 to 2 years, 46 (19.5%) respondents were between 3 to 5 years, 1 (0.4%) respondent was between 6 to 10 years, 59 (25.0%) respondents were between 11 to 20 years, 14 (5.9%) respondents were 21 years and above, while 11 (4.7%) respondents had no experience of using computer at the workplace. Almost 95.3% of the respondents in the agencies have various level of experience in using computer.

TABLE 3. Demographic Information of the Respondents

		Frequency	Percentage (%)
Agency Name	PPAS	23	9.7
	MAIS	23	9.7
	LZS	45	19.1
	PWS	5	2.1
	LPHS	13	5.5
	PADAT	12	5.1
	LUAS	11	4.7
	MSNS	7	3.0
	PKPS	5	2.1
	PKNS	92	39.0
Age	18-21 years old	3	1.3
	22-30 years old	36	15.3
	31-40 years old	120	50.8
	41-50 years old	55	23.3
	51-60 years old	22	9.3
Gender	Male	101	42.8
	Female	135	57.2
Race	Malay	233	98.7
	Chinese	1	0.4
	Others	2	0.8
Service duration	1-2 years	39	16.5
	3.-5 years	47	19.9
	6-10 years	61	25.8
	11-20 years	77	32.6
	21 years and above	12	5.1
Educational level	SPM	18	7.6
	Diploma	40	16.9
	Bachelor Degree	43	18.2
	Master Degree	119	50.4
	PhD	13	5.5
	Others	3	1.3
Service scheme type	Integrated	7	3.0
	Executor	90	38.1
	Management and professional	139	58.9
Computer use at the workplace	Yes	221	93.6
	No	14	5.9
	Not sure	1	0.4

Computer using experience	1-2 years	105	44.5
	3-5 years	46	19.5
	6-10 years	1	0.4
	11-20 years	59	25.0
	21 years and above	14	5.9
	None	11	4.7

Table 4 shows the mean distribution for the frequency of use of IT at the workplace.

TABLE 4 Mean Distribution for the Frequency of Use of IT at Workplace

	Once a month F %	Once a week F %	Once a day F %	> 2 times a day F %	> 5 times a day F %	Mean Score	Level
Email	- -	3 1.3	24 10.2	65 27.5	144 61.0	4.48	High
Website	3 1.3	7 3.0	46 19.5	57 24.2	122 51.7	4.40	High
Social media	18 8.1	2 0.8	22 9.3	63 26.7	75 31.8	4.43	High
Leave application	121 51.3	82 34.7	25 10.6	3 1.3	5 2.1	1.68	Low
Pay slip	175 74.2	20 8.5	3 1.3	26 11.0	12 5.1	1.64	Low
Claim	151 64.0	1 0.4	40 16.9	2 0.8	12 5.1	2.23	Low
E-procurement	126 53.4	- -	52 22.0	2 0.8	2 0.8	2.64	Moderate
E-complaint	108 45.8	43 18.2	3 1.3	39 16.5	2 0.8	2.61	Moderate
Cloud computing	89 37.7	42 17.8	15 6.4	31 13.1	15 6.4	2.89	Moderate
Knowledge Management System	98 41.5	42 17.8	29 12.3	24 10.2	2 0.8	2.63	Moderate
Decision Support System	96 40.7	22 9.3	42 17.8	13 5.5	3 1.3	2.94	Moderate
Internet of Things (IoT)	78 33.1	35 14.8	27 11.4	31 13.1	5 2.1	3.13	Moderate
Big Data Analytic	116 49.2	- -	43 18.2	2 0.8	2 0.8	3.00	Moderate

Based on Table 4, the 3 highest mean score for the frequency of use of IT at the workplace are email with the mean score 4.48 which was the highest mean score, social media with the mean score 4.43 and website with the mean score 4.40. Overall, the usage of IT in the workplace is more concentrated in emailing, social media and website browsing activities.

Table 5 shows the compare means between agency name and frequency of use of IT at the workplace.

TABLE 5. Compare Means Between Agency Name and Frequency of Use of IT at the Workplace

Agency name		Email	Website	Social media	Leave application	Pay slip	Claim	E-procurement
PPAS	Mean	4.52	4.39	4.82	1.60	2.13	2.82	3.52
MAIS	Mean	4.52	4.39	4.82	1.60	2.13	2.82	3.52
LZS	Mean	4.51	4.37	4.84	1.62	2.08	2.82	3.53
PWS	Mean	4.20	4.00	5.40	2.00	1.20	2.40	3.40
LPHS	Mean	4.30	4.15	5.07	1.84	1.69	2.92	3.53
PADAT	Mean	4.33	4.25	5.08	1.83	1.66	3.08	3.75
LUAS	Mean	4.27	4.18	5.09	1.90	1.36	2.90	3.81
MSNS	Mean	4.28	4.14	5.28	2.00	1.57	2.71	3.42
PKPS	Mean	4.60	4.40	5.20	1.60	2.60	2.80	3.40
PKNS	Mean	4.54	4.52	3.61	1.64	1.18	1.27	1.21
Total	Mean	4.48	4.39	4.43	1.68	1.64	2.22	2.64

TABLE 5. (continued). Compare Means Between Agency Name and Frequency of Use of IT at the Workplace

Agency name		E-complaint	Cloud computing	Knowledge Management System	Decision Support System	Internet of Things (IoT)	Big Data Analytic
PPAS	Mean	3.47	3.82	3.52	3.95	4.13	4.00
MAIS	Mean	3.47	3.82	3.52	3.95	4.13	4.00
LZS	Mean	3.46	3.77	3.53	3.97	4.15	4.02
PWS	Mean	3.40	3.40	3.40	4.60	4.80	4.40
LPHS	Mean	3.30	3.46	3.46	4.15	4.38	4.15
PADAT	Mean	3.41	3.58	3.58	4.00	4.25	4.00
LUAS	Mean	3.36	3.54	3.54	4.27	4.45	4.27
MSNS	Mean	3.28	3.28	3.28	4.14	4.28	4.14
PKPS	Mean	3.60	3.60	3.60	3.80	4.00	4.00
PKNS	Mean	1.30	1.63	1.25	1.21	1.41	1.26
Total	Mean	2.60	2.88	2.63	2.93	3.12	2.97

Based on Table 5, overall, it shows that the use of email at the workplace has the highest total mean score 4.48, then followed by the use of social media with total mean score 4.43 and the use of pay slip as the least use of IT at the workplace with total mean score 1.64.

The agency with the highest mean score uses of email at the workplace is PKPS with mean score 4.60, while the agency with the lowest mean score is PWS with mean score 4.20. The agency with the highest mean score uses of social media at the workplace is PWS with mean score 5.40, while the agency with the lowest mean score is PKNS with mean score

3.61. The agency with the highest mean score uses of pay slip at the workplace is PKPS with mean score 2.60, while the agency with the lowest mean score is PKNS with mean score 1.18.

Email is the most frequent use among agencies because email is one of the main medium or official communication that is widely used to communicate information, deliver notices, correspondence that used almost all the time during the working period and many other functions of email use. While the use for pay slip is the least frequent because the need is only periodic and depends on current needs.

Table 6 shows the compare means between agency name, service scheme type and frequency of use of IT at the workplace.

TABLE 6. Compare Means Between Agency Name, Service Scheme Type and Frequency of Use of IT at the Workplace

Agency name	Service scheme type		Email	Website	Social media	Leave application	Pay slip	Claim	E-procurement
PPAS	Executor	Mean	5.00	5.00	4.00	1.00	3.00	4.00	3.00
	Management and professional	Mean	4.42	4.26	5.00	1.74	1.95	2.58	3.63
MAIS	Executor	Mean	5.00	5.00	4.00	1.00	3.00	4.00	3.00
	Management and professional	Mean	4.42	4.26	5.00	1.74	1.95	2.58	3.63
LZS	Executor	Mean	5.00	5.00	4.00	1.00	3.00	4.00	3.00
	Management and professional	Mean	4.41	4.24	5.03	1.76	1.89	2.57	3.65
PWS	Management and professional	Mean	4.20	4.00	5.40	2.00	1.20	2.40	3.40
LPHS	Executor	Mean	5.00	5.00	4.00	1.00	3.00	4.00	3.00
	Management and professional	Mean	4.18	4.00	5.27	2.00	1.45	2.73	3.64
PADAT	Executor	Mean	5.00	5.00	4.00	1.00	3.00	4.00	3.00
	Management and professional	Mean	4.20	4.10	5.30	2.00	1.40	2.90	3.90
LUAS	Executor	Mean	5.00	5.00	3.00	1.00	1.00	3.00	3.00
	Management and professional	Mean	4.20	4.10	5.30	2.00	1.40	2.90	3.90
MSNS	Management and professional	Mean	4.29	4.14	5.29	2.00	1.57	2.71	3.43
PKPS	Executor	Mean	5.00	5.00	5.00	1.00	5.00	5.00	3.00



	Management and professional	Mean	4.50	4.25	5.25	1.75	2.00	2.25	3.50
PKNS	Integrated	Mean	4.71	9.71	3.86	1.43	1.00	1.00	1.57
	Executor	Mean	4.46	4.13	3.56	1.75	1.25	1.37	1.24
	Management and professional	Mean	4.82	3.94	3.76	1.29	1.00	1.00	1.00
Total	Integrated	Mean	4.71	9.71	3.86	1.43	1.00	1.00	1.57
	Executor	Mean	4.59	4.34	3.67	1.57	1.68	2.01	1.67
	Management and professional	Mean	4.40	4.16	4.96	1.77	1.65	2.43	3.33

TABLE 6. (continued). Compare Means Between Agency Name, Service Scheme Type and Frequency of Use of IT at the Workplace

Agency name	Service scheme type		E-complaint	Cloud computing	Knowledge Management System	Decision Support System	Internet of Things (IoT)	Big Data Analytic
PPAS	Executor	Mean	2.50	3.50	3.50	2.00	2.50	2.00
	Management and professional	Mean	3.68	3.89	3.53	4.37	4.47	4.42
MAIS	Executor	Mean	2.50	3.50	3.50	2.00	2.50	2.00
	Management and professional	Mean	3.68	3.89	3.53	4.37	4.47	4.42
LZS	Executor	Mean	2.50	3.50	3.50	2.00	2.50	2.00
	Management and professional	Mean	3.68	3.84	3.54	4.41	4.51	4.46
PWS	Management and professional	Mean	3.40	3.40	3.40	4.60	4.80	4.40
LPHS	Executor	Mean	2.50	3.50	3.50	2.00	2.50	2.00
	Management and professional	Mean	3.45	3.45	3.45	4.55	4.73	4.55
PADAT	Executor	Mean	2.50	3.50	3.50	2.00	2.50	2.00
	Management and professional	Mean	3.60	3.60	3.60	4.40	4.60	4.40

LUAS	Executor	Mean	1.00	3.00	3.00	3.00	3.00	3.00
	Management and professional	Mean	3.60	3.60	3.60	4.40	4.60	4.40
MSNS	Management and professional	Mean	3.29	3.29	3.29	4.14	4.29	4.14
PKPS	Executor	Mean	4.00	4.00	4.00	1.00	2.00	1.00
	Management and professional	Mean	3.50	3.50	3.50	4.50	4.50	4.75
PKNS	Integrated	Mean	1.00	1.86	1.29	1.57	1.57	1.00
	Executor	Mean	1.37	1.53	1.28	1.21	1.41	1.28
	Management and professional	Mean	1.18	1.94	1.12	1.12	1.35	1.29
Total	Integrated	Mean	1.00	1.86	1.29	1.57	1.57	1.00
	Executor	Mean	1.64	2.01	1.82	1.40	1.68	1.46
	Management and professional	Mean	3.31	3.50	3.22	4.00	4.14	4.05

Based on Table 6, the highest use of email is used by executor service scheme which is mean score 4.59. Although the integrated service scheme shows the highest score in the use of email which is mean score 4.71, but the integrated service scheme is only available in PKNS agency only and the data could not represent the entire agencies. The highest use of social media is used by management and professional service scheme with mean score 4.96, while the highest use of pay slip is used by executor service scheme with mean score 1.68.

The use of email is more used by executor due to this service scheme more carrying out clerical work such as sending documents and so on. The use of social media is more used by management and professional service scheme especially Whatsapp application due to currently this medium becoming semi-official in giving instructions, conveying information and others.

Table 7 shows the mean distribution for knowledge discovery issues. SD is for strongly disagree, D for disagree, NS for not sure, A for agree and SA for strongly agree.

TABLE 7. Mean Distribution for Knowledge Discovery Issue

	SD	D	NS	A	SA	Mean	Level
	F	F	F	F	F	Score	
	%	%	%	%	%		
I discover knowledge through meetings.	3	5	78	110	40	3.76	High
	1.3	2.1	33.1	46.6	16.9		
I discover knowledge through phone conversations with colleagues.	9	30	70	102	25	3.44	Moderate
	3.8	12.7	29.7	43.2	10.6		

I discover knowledge from documents developed in groups.	1 0.4	17 7.2	30 12.7	163 69.1	25 10.6	3.82	High
I discover knowledge through the database, website and portal of this organization.	- -	2 0.8	56 23.7	153 64.8	25 10.6	3.86	High
I discover knowledge through best practices and teaching.	- -	2 0.8	55 23.3	155 65.7	24 10.2	3.86	High
I discover knowledge through seminars, brainstorming and retreat.	1 0.4	17 7.2	28 11.9	148 62.7	42 17.8	3.90	High
I discover knowledge through video conferencing, electronic group discussions and email.	2 0.8	19 8.1	43 18.2	143 60.6	29 12.3	3.75	High

Based on Table 7, the 3 highest mean score in identifying knowledge discovery issue in Selangor State government agencies are the respondents discover knowledge through seminars, brainstorming and retreat (mean score 3.90) which was the highest mean score, the respondents discover knowledge through the database, website and portal of the organization (mean score 3.86) and the respondents discover knowledge through best practices and teaching (mean score 3.86). In summary, discovery of knowledge is through seminars, brainstorming and retreat; and gathering form organization websites; and lastly, through best on job practices and teaching.

Table 8 shows the mean distribution for knowledge capturing issues.

TABLE 8. Mean Distribution for Knowledge Capturing Issue

	SD F %	D F %	NS F %	A F %	SA F %	Mean Score	Level
I capture knowledge through external agencies (state governments, experts, customers, competitors and stakeholders).	3 1.3	9 3.8	51 21.6	137 58.1	35 15.3	3.82	High
I capture knowledge through group chat such as Whatsapp, Telegram etc.	2 0.8	24 10.2	38 16.1	138 58.5	34 14.4	3.76	High
I capture knowledge through departments, subsidiaries and management as well as support.	2 0.8	3 1.3	73 30.9	132 55.9	26 11.0	3.75	High
I capture knowledge in the government agency through IT.	1 0.4	18 7.6	35 14.8	142 60.2	40 16.9	3.86	High
I capture knowledge and experience while doing tasks.	1 0.4	50 21.2	- -	120 50.8	65 27.5	4.10	High
I capture knowledge and experience through observation.	1 0.4	17 7.2	39 16.5	137 58.1	42 17.8	3.86	High
I capture knowledge and experience during meetings.	1 0.4	18 7.6	48 20.3	129 54.7	38 16.1	4.03	High

Based on Table 8, the 3 highest mean score in identifying knowledge capturing issue in Selangor State government agencies are the respondents capture knowledge and experience while doing tasks (mean score 4.10) which was the highest mean score, the respondents capture knowledge and experience during meetings (mean score 4.03), and the respondents capture knowledge in the government agency through IT and the respondents capture knowledge and experience through observation, which these 2 items have shared the same mean score 3.86. Most of the knowledge and experience capturing were through performing job tasks and in their agencies.

Table 9 shows the mean distribution for knowledge sharing issues.

TABLE 9. Mean Distribution for Knowledge Sharing Issue

	SD	D	NS	A	SA	Mean	Level
	F	F	F	F	F	Score	
	%	%	%	%	%		
I share knowledge (tacit/experience) with colleagues.	-	3	41	161	31	3.93	High
	-	1.3	17.4	68.2	13.1		
I share knowledge (tacit/experience) with colleagues through IT.	-	2	60	130	44	3.92	High
	-	0.8	25.4	55.1	18.6		
I share knowledge through memos, letters, manuals and presentations.	-	28	64	126	18	3.57	Moderate
	-	11.9	27.1	53.4	7.6		
I share knowledge in the form of memos, letters, manuals and presentations through IT.	-	23	66	126	21	3.61	Moderate
	-	9.7	28.0	53.4	8.9		
I share knowledge and experience while doing tasks.	-	2	50	147	37	3.93	High
	-	0.8	21.2	62.3	15.7		
I share my knowledge and experience through seminars, brainstorming and retreat.	1	22	22	154	37	3.86	High
	0.4	9.3	9.3	65.3	15.7		
I share knowledge and experience during meetings.	-	20	49	139	28	3.74	High
	-	8.5	20.8	58.9	11.9		

Based on Table 9, the 3 highest mean score in identifying knowledge sharing issue in Selangor State government agencies are the respondents share knowledge (tacit/experience) with colleagues and the respondents share knowledge and experience while doing tasks, that have shared the same mean score 3.93 which was the highest mean score, the respondents share knowledge (tacit/experience) with colleagues through IT (mean score 3.92) and the respondents share knowledge and experience through seminars, brainstorming and retreat (mean score 3.86).

Table 10 shows the mean distribution for knowledge application issues.

TABLE 10. Mean Distribution for Knowledge Application Issue

	SD F %	D F %	NS F %	A F %	SA F %	Mean Score	Level
I received instructions from management through IT.	1 0.4	5 2.1	41 17.4	165 69.9	24 10.2	3.87	High
I use the knowledge gained from IT through group chat such as Whatsapp, Telegram etc.	- -	19 8.1	19 8.1	173 73.3	25 10.6	3.86	High
I use IT in daily tasks.	1 0.4	31 13.1	- -	133 56.4	71 30.1	4.16	High
I use IT in sharing knowledge and experience while doing assignments.	1 0.4	36 15.3	- -	163 69.1	36 15.3	3.99	High
I use IT in sharing knowledge and experience through seminars, brainstorming and retreat.	- -	19 8.1	22 9.3	164 69.5	31 13.1	3.89	High
I use IT in sharing knowledge and experience during meetings.	- -	5 2.1	56 23.7	143 60.6	32 13.6	3.86	High
My organization uses IT to disseminate any policy to all employees.	- -	2 0.8	35 14.8	169 71.6	30 12.7	3.96	High

Based on Table 10, the 3 highest mean score in identifying knowledge application issue in Selangor State government agencies are the respondents use IT in daily tasks (mean score 4.16) which was the highest mean score, the respondents use IT in sharing knowledge and experience while doing assignments (mean score 3.99) and the respondents' organization use IT to disseminate any policy to all employees (mean score 3.96).

Through analysis done, it is discovered that Selangor State government agencies have used IT in assisting the operational of the agencies. The most widely used IT application in the workplace are email applications. Next is the use of social media such as Facebook, WhatsApp, WeChat and Instagram and the next one is the use of websites. Then, the medium used are Internet of Things (IoT) technology, Big Data Analytic, Decision Support System, Cloud Computing, E-procurement, Knowledge Management System and E-complaint. Meanwhile, the most rarely used of IT are Pay Slip, Leave Application and Claim.

Regarding knowledge discovery issue, this study found that in addition to conventional methods such as meetings, seminars and so on, the employees in Selangor State government agencies also use IT for this purpose. This has been proved by the high mean scores for the items that related to the discovery of knowledge through databases, websites and portals in the agencies, while discover the knowledge through video conferencing, electronic group discussions and e-mail application.

As for knowledge capturing issue, the findings of the study found that employees in Selangor State government agencies also use IT for this purpose. The employees who captured knowledge through chat groups like Whatsapp group, Telegram and other groups as well as through other IT technologies have shown high mean scores. However, the knowledge capturing of employees are not as high as the knowledge capturing while doing tasks and during meetings.

Regarding knowledge sharing issue, this study also found that knowledge sharing activities also occur using IT. The employees in Selangor State government agencies also share knowledge, especially tacit knowledge (experience) among colleagues through IT. Yet employees only share knowledge moderately for knowledge in the form of memos, letters, manuals and presentations through IT. However, knowledge and experience sharing activities occurred higher while doing tasks.

As for knowledge application issue, this study found that the employees in Selangor State government agencies also use IT for the purpose of applying their knowledge in daily tasks. The employees also use IT in disseminating any policy to all employees. In addition, employees also receive instructions from management through IT.

The results of this study support the findings of the study by Syed Omar Sharifuddin and Rowland (2004) that knowledge in Selangor State government agencies can be found in the policies, manuals, databases and so on that used to assist governance in the government agencies.

## CONCLUSION

This study has proved that knowledge management technology (or in this study was referred as information technology or IT) is part of the instruments used to assist governance in the government agencies of Selangor State. Among the highest usage are email applications, Social Media such as Facebook, WhatsApps, Wechat and Instagram, and also websites. Encouragement from management, related policies and even IT infrastructure such as high-speed of Internet, databases and others are available and support all information life cycle processes from knowledge discovery, knowledge capturing, knowledge sharing as well as knowledge application to run well in Selangor State government agencies. There is a need to strengthen the implementation process to sustain knowledge management within the agencies. Therefore, to achieve this, more effort and trainings on the usage of IT by Selangor State government are needed in achieving an efficient management in the agencies of Selangor state government.

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