

A QUALITATIVE INVESTIGATION ON FACTORS THAT INFLUENCE KNOWLEDGE SHARING IN ORGANIZATIONS

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ABSTRACT

Factors that influence knowledge sharing among knowledge workers in organizations can seriously affect performance and productivity because poor understanding of these factors can de-motivate knowledge sharing culture and attitude in the organizations. The aim of this investigation is to study the factors that influence knowledge sharing in organization and the relationship between those factors. The study looks at six factors: Information Technology, Learning Strategy, Outcome Expectations, Trust, Reward and the role of affect in this research. The role of Affect is introduced into this research base on strong evidence highlighted by many related works that support the significance of affect that can influence knowledge sharing in organizations. This research interviewed 13 individuals from a total of five (5) participating organizations to collect their views on questions designed to solicit important details pertaining to factors discussed above. The outcomes of our findings highlight that the Information Technology Use on KS tools functions need to be more intuitively interesting. As for Learning strategy, participants express that they are happy to share knowledge on the job with some say there is a need to have proper learning strategies in the organizations. On the Reward, interviewees mostly agree that rewards are motivator. On Trust, findings highlight that policy and procedures, validation and source of the information are three key considerations that provide the level of trust on the knowledge obtained and reliability. As for the element of affect, most of the participants highlight that if they are emotionally unpleasant they either provide very little responses on queries forwarded to them, don't entertain colleagues, or postpone their responses.

Field of Research: *Knowledge sharing, role of affect, Web 2.0, KS tools, knowledge sharing factors*

1. Introduction

Organizational knowledge has always been widely recognized as the key asset of modern organizations where past performances were lessons learned that can be used to make future decisions. Knowledge management has been defined differently in many literatures depending on the context of the disciplines involved: information technology, psychology, philosophy, education, and management. The following are some definitions of knowledge management from papers reviewed:

“Knowledge management (KM) refers to identifying and leveraging the collective knowledge in an organization to help the organization to compete” von Krogh (1998)

“Knowledge management is the discipline dedicated to more intentional means of people creating and sharing knowledge – data, information, and understanding in a social context – to perform the right organizational or business actions.” KMGov (2001)

A successful knowledge management implementation enables organizations to gain competitive advantage and be able to perform more efficiently by improving organizational practices in their day-to-

day tasks. Wal-Mart is one of the world largest retail corporations that benefit from the use of knowledge in study carried out by Seo-Kisumu (2011). In its efforts to develop and nurture the insightful knowledge management skills in the organization, Wal-Mart has a set of organizational objectives which include improved business performance, innovation, competitive advantage as well as continuous improvement of business operations and processes. Wal-Mart incorporates important knowledge related activities such as formal apprenticeship, discussion forums, corporate libraries, mentoring programs and professional training. Wal-Mart also use information technologies such as expert systems, knowledge bases, group decision support systems, intranets, knowledge repositories and also computer supported cooperative work as knowledge enablers in its knowledge strategy (Seo-Kisumu, 2011).

KPMG, one of the Big Five consulting firms, has invested over millions of dollars to embed knowledge management practices in using knowledge management system, K-World. According to Gates (1999), K-World was designed to connect and support KPMG's 93,000 people worldwide in order to provide an integrated corporate memory for collaboration. On June 9th 1999, KPMG rolled out K-World to the United States, United Kingdom, Germany and the Netherlands. By 2000, all KPMG users include countries like Canada, Australia, Sweden and Switzerland also brought into the system. With K-World, KPMG is able to facilitate the merger of clients where a task that would have taken 80 hours in the past took only one hour now. This has benefited KPMG as a smarter firm with better understanding of their customers' needs. The main aim of K-World is to facilitate collaborative Communities of Practice (CoP) in KPMG. This is because K-World can bring qualified internal content and filtered external content to each community. Trotman (2003) noted that K-World's resources include access to company financial statements, audit engagement tools (such as financial disclosure checklists) and training materials which encompass all aspects of the organization.

However, a lot of research works highlighted that most organizations focus on the Knowledge Management Systems implementation based on organizational goals rather than focusing on its implementation strategy. A significant area that most researchers have not done much is the role of affect of employees as they use digital systems in their working environments. Related works reviewed support that the role of affect can be examined prior to an event rather than after an event has occurred. Besides organizational, people and technological factors, the influence of the role of affect in knowledge sharing has started to take a more important role in knowledge research works.

One of the significances of this research is to investigate the role of affect in organizational knowledge sharing among knowledge workers in organizations. Related research works reviewed earlier had highlighted that the role of affect can be an important factor that influence the knowledge sharing activity besides the processes, outcomes of work motivation, user behaviour (Seo *et al*, 2006; Furneaux *et al*, 2008; Argyris, 1971). At the point of this writing, We have not found any research work that investigate the role of affect and organizational knowledge sharing, this research studies the influence of the role of affect in addition to other factors that influence knowledge sharing in organizations.

A comprehensive study on factors that influence knowledge sharing activity in organizations was carried out in our literature review. These factors have been identified and studied in depth in order to justify their importance with respect to organizational knowledge sharing before they are included in to this study. The role of affect is also extensively reviewed prior to the inclusion into this study. The inclusion of the role of affect is to examine the impact of emotion on user behaviour and its richness and explanatory power to study the user behaviour with emotions to enhance the study of knowledge sharing in this project. The ability to explain how such a factor influences employees in knowledge sharing by looking at the emotional aspect besides the cognitive aspect of the study. In addition, this

research also investigates the relationships of these factors, their influences to each other, and their effect to the employees in their knowledge sharing activity.

2. Review of Related Works

Several areas of related works were studied in this research work. The following discussions on related works were undertaken by researchers are to lay the foundation and to justify the need to carry out this research project.

2.1 Web 2.0 Technology and Systems

Web 2.0 has been discussed widely for many years already. However, there are still many different Web 2.0 definitions in works published. Sadly, some even criticize Web 2.0 as a marketing buzzword. According to Tim O'Reilly (2005), Web 2.0 was defined as "a network as platform, spanning all connected devices". Website providers are moving to Web 2.0 to allow users to communicate ideas, video, audio, text, photos, social bookmarking, and newsreaders/RSS on these platforms such as Wikipedia, YouTube, Flickr, Digg and Bloglines. Users no longer rely solely on information provided on the websites. User generated content has rapidly taken the web space by storm in a very short span of time. The core characteristics of Web 2.0 as stated by O' Reilly (2005) are as follow: web as a platform, users control their own data, services – not packaged software, architecture of participation, cost-effective scalability, remixable data source and data transformations, software above the level of a single device, and harnessing collective intelligence. Web service providers need to understand the factors that influence the usage of their technology in order to promote their services and increase their popularity in order to generate more business opportunities. Over the years, organizations have started to use Web 2.0 as a knowledge sharing tools. It has started to catch up with conventional knowledge sharing tools in the market. Since the scope and functionalities of Web 2.0 as knowledge sharing tools are in so many forms, this research will consider the technological factor besides organizational and people factors that influence employees to engage in knowledge sharing activities using Web 2.0 as organizational knowledge sharing tools.

Sotirios and Alya (2009) also identified several key determinants of knowledge sharing and collaboration using Web 2.0 technologies in their research. Their research findings pointed out factors that are barriers to employees' active participation in various platforms within a large multinational firm. The four (4) key determinants identified by them were: history, outcome expectations, perceived organizational/management support, and trust. History was identified as one of the main barriers on knowledge sharing and collaboration using Web 2.0 technologies. The history referred to the existing technologies used in the organizations. For example, tools such as e-mail are perceived to be more useful than blogs and wikis by current users. McAfee (2006) pointed out that most of the member staff will underestimate the benefits of blogs and wikis and inflate the importance of tools such as e-mail, instant messaging and other existing technologies,. In short, people are afraid to change and move out of their comfort zone. As for outcome expectations, perceived benefits and rewards were identified as key determinants of knowledge sharing using Web 2.0 technologies. In their research, they concluded that majority of the employees stated that they use Web 2.0 because it helps them to do their jobs more effectively. These include reduce e-mail overload and avoid answering the same questions multiple times. Employees who gained positive outcomes from using Web 2.0 technologies were the ones participates actively while those who are skeptical about Web 2.0 or perceived Web 2.0 as costs rather than benefits were the ones refraining from using Web 2.0 (Sotirios *et al.*, 2009). Strong messages sent by top management are another determinant that motivates individuals to perform certain

behaviour if such behaviour is endorsed and approved. When employees did not get much support from the top management, tools are not properly introduced, training is not given or benefits of the tools have not been communicated to the employees, the usage of Web 2.0 among employees in the organization will seriously be affected. Trust among employees on the quality or accuracy of the information being shared is a factor of concern since content on Web 2.0 platform are user generated. Sotirios *et al.* (2009) remarked that many respondents have successfully established and maintained close social networks with others virtually on Web 2.0.

2.2 Factors that influence KM success and failures

Fontaine and Lesser (2002) stated that knowledge management (KM) is the ability of an organization to create, share and use the collective knowledge of its products, processes and people to increase workplace productivity and reduce activities that “reinvent the wheel” – is being moved to the forefront of many corporate agendas. KM is becoming increasingly important for organizations and can be used as a competitive advantage if put through proper implementation and use. This is because knowledge is the key to success as a company is able to exploit its strengths and distinguish itself from its competitors. Alavi and Lidner (2001) defined KM as the management of an organization’s knowledge through systematic processes for acquiring, organizing, sustaining, applying, sharing and renewing both the tacit and explicit knowledge to enhance the performance and values of the organization. Organizations usually have lot of data collected and stored in the data warehouses but these data were not used properly to convert into information for sharing. For example, data on customers’ purchases allow knowledge about customers’ purchasing behaviour can help to determine the types of product, quality and quantity to maintain and this allows operators to identify the customers’ demand at the right time in order to help organizations to maintain the loyal customer base.

According to Lucier (2003), 84% of all KM programs generally failed. This is due to the development of successful KM processes is a difficult task. In addition, there are many factors that contribute to the failures of KMS. Chase (1997) also pointed out that more attention should be placed on people when developing KM strategy. In his research findings, 70% of the respondents cited that people is the most important factor, followed by 25% on technology and 22% on processes. It was also highlighted that the role of affect is a dominant factor the influences of usage towards new technologies.

Chandran *et al.* (2009) looked at awareness, problems and KMS implementation possibilities in their research by focusing on medium-sized manufacturing firms in Malaysia. They used random sampling method on selected group of employees ranging from managerial to operational in three locations: Kuala Lumpur, Pulau Pinang, and Johor. A conceptual framework was designed to identify the problems in KM among medium-sized manufacturing firms as well as the ways they handle their problems and to determine the benefits that can be gained through the implementation of KM. The framework developed by Chandran *et al.* (2009) consists of two elements: Phases and the Problems. Phases consist of four (4) distinct areas: Acquisition, Dissemination, Utilization and Evaluation, which are identified as independent variables. These phases determine the types of problems that they encountered in the implementation of KM. According to their research, the problems of KM implementation resulted in 84% of the respondents highlighted that the introvert culture of the organization hinders the acquiring of external knowledge, 81% of them face difficulties in accessing to relevant knowledge due to lack of skills in using various technologies and tools, and 79% of the respondents lack of expertise to identify the key knowledge sources within the organization. Their study also shows that most respondents in the organizations are aware of the importance of KM. Their findings concluded that 73.7% of the respondents agree that KMS is able to improve the market position by operating more intelligently,

65.2% agrees that KMS provides a better foundation for problem solving and making decisions like make-or-buy of new knowledge and technology, alliances and merges, and 65.3% agrees that KMS improves internal and external communication.

2.3 Organizational Knowledge Sharing and Reuse

The primary purpose of KMS is for sharing of knowledge with the people who needs it without the need to re-gather, re-organize and replicate the existing knowledge that is readily available in the KM repository. With KMS, time and resources can be saved. There is no need to request the same information from other sources for the need of the daily tasks and activities in the working environment. Davenport, Jarvenpaa, and Beers (1996) categorized knowledge processes into whether they involve knowledge creation (as in research or new product development) or knowledge reuse (as in sharing best practices or helping others solve common technical problems). A research conducted by Markus and Lynne (2001) on the types of knowledge reuse in the organizations and factors in successful knowledge reuse concluded that there are at least four (4) distinct knowledge reuse situations involving different types of knowledge reusers: shared work producers, share work practitioners, expertise-seeking novices, and secondary knowledge miners. His concepts used to differentiate the knowledge transfer or reuse situations are:

- i. Knowledge reuser and the purpose of the knowledge reuse
- ii. What the recipient needs to know, knows, and doesn't know
- iii. Challenges the recipient faces at each stage of knowledge reuse (defining the question, locating experts or documents, selecting experts or documents, and applying the knowledge).

In his research, Markus (2001) also highlighted the basic concepts in knowledge sharing. The concept consists of process of knowledge reuse, the roles of knowledge reuse and the types of knowledge repositories. The knowledge reuse process consists steps to capture or document knowledge, package knowledge for reuse, distribute or disseminate knowledge (providing people with access to it), and reuse knowledge. There are three (3) roles of knowledge reuses process: the knowledge producer – who is the generator or documenter of the knowledge, knowledge intermediary – the person who prepares the knowledge for reuse by summarizing and packaging it, and the knowledge consumer – the person who receives and uses the knowledge. As for types of knowledge repositories in knowledge reuse, there are two types: documents repositories and data repositories. He also pointed out that the four types of knowledge reuse scenarios are reuse by shared knowledge producers, reuse by shared work practitioners, reuse by expertise-seeking novices, and reuse by secondary knowledge miners. Markus (2001) concluded that each type of knowledge reuser has different set of needs and may encounter different kinds of problems when attempting to reuse knowledge. Therefore, in order for knowledge reuse to be successful, the knowledge producer needs to meet reuser's needs who are the author of the knowledge repositories, and provide rewards for beneficial contribution.

Another research conducted by So and Bolloju (2005) explained the intentions to share and reuse knowledge in the context of IT Service Operations (ITSO). The main focus of ITSO is to provide daily monitored services and handle customer service requests to meet agreed service levels and increase customer satisfaction. The processes that they identified under ITSO include incident and service request management, problem management and operations management. They indicated that in order to encourage knowledge sharing, top management needs to focus on building up a positive attitude in their employees through improving relationships and recognizing employees' contribution. As mention by Sotirios *et al.* (2009), recognitions from top management and incentives to knowledge contributors

were identified as two of the key determinants in knowledge sharing. Recognition from top management sends strong messages to the knowledge workers in the organizations as to how important sharing knowledge is to the organizations so that people will be more inclined to carry the expected sharing behaviour and they are more likely to approve and even applaud it. So and Bolloju (2005) concluded that employees are more willing to contribute and share knowledge when knowledge sharing attitude is encouraged in the organizations. They also provide some recommendations such as how to promote successful knowledge reuse in organization, for example, providing appropriate incentives or motivations for reuse; and providing training and consultation to employees. This is also mentioned by Sotirios *et al.* (2009) in the Wal-Mart case study for their successful implementation of KMS.

2.4 The Role of Affect in Organizational Knowledge Sharing

Affect is often passive. It refers to the experience or emotion and often produces a change in people towards something or somebody. Sometimes affect is also referred to displaying "a facial, vocal, or gestural behaviour that serves as an indicator of affect" (APA, 2006). The affective domain, on the other hand, refers to emotions as well as their expression which are outwards. Similar to the theory of emotion, the definition of the affective domain is rather unclear. It doesn't have a unified definition. Emotion, however, is the core of the affective domain where the root of the theory starts. This is because emotion involves three subcomponents: feeling, cognitive and behaviour. Feeling is the physiological sensation one experiences. Cognition is the subjective thoughts that accompany the sensation. Behaviour might be facial display, body positioning, or a variety of other actions which is related to both feelings and some accompanying cognitions. Thus, the affective domain encompasses physiological, cognitive, and behavioural processes related to emotion (Brett, Smith, Price and Huitt, 2003). Many theorists consider affect to be post-cognitive (Lazarus, 1982). This means that the role of affect is thought to be displayed out only after a certain amount of cognitive processing of information has been accomplished. In this view, an affective reaction such as liking, disliking, evaluation, or the experience of pleasure or displeasure is based on a prior cognitive process in which a variety of content discriminations are made and features are identified, examined for their value, and weighted for their contributions (Brewin, 1989). These affects can be identified through immediate facial reactions that people have to a stimulus, typically well before they could process any real response to the stimulus. The role of affect can be measured by using PANAS [Positive and Negative Schedule] (Watson, Clark & Tellegan, 1988). The PANAS is a 20-item self report measure of positive affect (PA) and negative affects (NA). However, studies have shown that the original 20-item PANAS with its 10-item PA and NA each consist of redundancy where the PANAS items are closely related to each other in meaning. The studies were validated using Structural Equation Modeling (SEM) conducted by Crawford & Henry (2004) and Crocker (1997). Hence, an international PANAS Short Form (I-PANAS-SF) was developed by Thompson (2007) as an alternative for the original PANAS scale.

The impact of emotion on user behaviour and the richness and explanatory power of user behavior with the presence of emotions can enhance the Information Systems study (Furneaux and Nevo, 2008; Argyris, 1971). Based on the research conducted by Furneaux (2008), it is concluded that emotions plays three potentially important roles in IS theory development. First, they serve as important contextual factors surrounding the decision process. Second, anticipated emotions have been identified as impacting the likelihood that a particular decision will be made. Third, the distinction between cognitive and emotional antecedents of decisions that is established by the existence of anticipatory emotions serves to highlight the potentially unique causal role of emotions in driving behaviour of knowledge workers in organizations.

2.5 Knowledge Sharing Tools

In order for knowledge to be shared, methods or tools have been developed to ease the sharing process over the years. As senior individuals in organizations are set to retire when new generation of workforce join the organization. It may seem as a lost of manpower, but on the contrary, it is more of lost of knowledge. Senior individuals have more valuable knowledge that is gained over the years of experience working in the organization; it might be lost when the senior individuals leave the organization.

As define by Knowledge Sharing Toolkit (www.kstoolkit.org), knowledge sharing tools, means websites or software that can be used to support personal or group knowledge sharing. KS Toolkit is actually a Wiki. Its content is contributed by numerous sources and has the collection of tools and methods available in the market today.

2.6 Factors that Influence Knowledge Sharing

Factors that influence the success of organizational knowledge sharing have been intensively researched by many researchers for years now. A good understanding of factors that will fail or succeed a KM project depends on business goals, size of organizations, culture, management, technology used and knowledge strategy. Wang and Noe (2010) developed a framework on knowledge sharing based on the past research works. Wang and Noe (2010) reviewed the qualitative and quantitative studies of individual-level knowledge sharing activities. Based on their reviews, they developed the framework to understand knowledge sharing in the organizations. They are able to identify five areas of emphasis in knowledge sharing research: organizational context, interpersonal and team characteristics, cultural characteristics, individual characteristics and motivational factors. In their framework, the role of affect was not introduced as a factor in to study the organizational knowledge sharing.

Fu and Farn (2002) conducted a reasearch on the factors that influence information and knowledge sharing in organizations. Their research found that organizational culture influenced individual's belief of organization trust and psychological safety. Psychological safety defined by Fu *et al* (2002) as a belief that an individual is safe for interpersonal risk taking. Lipshitz, Popper and Friedman (1999) defined psychological safety as "a state in which people feel safe in honestly discussing their mistakes and what they think, and how they feel." Employees who perceived higher trust and psychological safety to their peers seemed more likely to share information and knowledge with others. Trust is yet again mentioned as a factor that influences knowledge sharing in the organizations (Sotirios & Alya, 2009; Davenport and Prusak, 1998; McDermott and O'Dell, 2001; Neil, 2010).

Ardichvili, Page, and Wentling (2002) conducted a research at Caterpillar Inc. and their study indicates that "when employees view knowledge as a public good belonging to the whole organization, knowledge flows easily." Ardichvili *et al* (2002) remarked that knowledge sharing is therefore motivated by moral obligation and community interest, not by self-interest. Self-based considerations describe employees who have reached a stage where they are considered as experts who start to contribute knowledge and share their expertise. The other two factors found in their research were organization's culture and trust.

Sotirios *et al* (2009) identified the key determinants of knowledge sharing and collaboration using Web 2.0 technologies in the outcomes of their research. Their research highlights that history, outcome expectations, perceived organizational/management support and trust are key knowledge sharing determinants. The four (4) key determinants that were identified will be further studied and elaborated

with other factors to examine their influence toward employees' knowledge sharing in the organization. In his research, he found that employee participation is an important perspective from the view of employees. So *et al* (2005) also indicated that top management should focus on building positive attitude in their employees through improving relationships and recognition among the employees. This is similar to the key determinants identified by Sotirios (2009) from the perspective of organization/management support.

3. Methodology

The research approach used in this research is a non-empirical research. Empirical research is the study that research put himself/herself into practice, e.g. experiments, fieldwork, interview, observation, whereas non-empirical research refers to the study that data gather from existing information, e.g. documentation, literature research. Numerous related works were reviewed to address and support the research objectives. From related works reviewed, there are many determinants that may influence knowledge sharing in the organizations. The factors that are essential have been evidently shown to be highly influential. These include Information Technology, Learning Strategy, Reward, Trust and Outcome Expectations. These factors will be studied on Malaysian organizations. The findings can be used as the base framework for further research. The role of affect is also included in this research. Related works on the role of affect (Furneaux et al, 2008; Argyris, 1971; Seo et al; 2006; Staw, 1984) have also been extensively investigated where it has been recognized as an important factor that is able to influence knowledge sharing in organizations. Plenty of research works have found that the study of cognitive aspect (Brett, Smith, Price and Huitt, 2003; Lazarus, 1982; Brewin, 1989) of knowledge workers have neglected the importance of role of affect or emotion toward the study of knowledge sharing and adoption of technology in the organizations. The findings of this research will be analysed using descriptive statistics as part of the analysis approach to determine whether the selected factors and the role of affect plays as a factor that influences employees and knowledge sharing in organizations. Descriptive analysis is used to describe the importance of each factor in the investigation so that the researcher can evaluate the influence of these factors on the knowledge sharing among knowledge workers in the organizations. This research will carry out qualitative research by carrying out interview with the interviewees. Interview sessions will be conducted to collect primary and in-depth information on the opinions of the employees towards the determinant factors as well as the role of affect that influence knowledge sharing in their organizations.

3.1 Research design

The research design uses interview as the research method to study the defined objectives of the research project. The factors that were identified through extensive literature review will be examined. The interview questions that were designed and tested by previous researchers have been examined and adopted with minor rewording for ease of understanding by participants.

3.2 Data sampling

The population that participates in this research needs to fulfil the following set of criteria. First, the sample needs to be individual from organizations that are knowledge driven intensive. Second, the individual must carry out knowledge sharing activity within the organizations using any knowledge sharing tools. The sample chosen in this research is the non-probability sampling method. Not all of the population has the same probability of being sampled; this is also due to the fact that not all organizations would be interested to participate in this research. Therefore, invitation of participation in

the interview session was sent out to three hundred (300) organizations via email, Twitter and Facebook using feedback form. If no response is acknowledged and received from the organizations then a followed up telephone call will be used. The result was twenty-three (23) companies responded and five (5) companies have agreed to participate in this research project. Many knowledge workers and organizations are not able to take part due to company policy and permission was not granted to them.

3.3 Data Collection Approaches / Methods

The data collection approaches adopted in this study is interview. Interview is used to solicit factual data from selected groups of individuals by providing a set of questions which will prepare them for the interview sessions. Data collected pave a more comprehensive understanding of what and how different factors can influence the knowledge sharing activity in the participating organizations.

3.4 Interview

As mentioned earlier, five (5) companies have agreed to participate in the interview session. They are United Overseas Bank (UOB), Hilti Malaysia, Ernst & Young (E&Y), Sunway Pyramid, and Sunway University Tun Hussein Onn Library (THOL). Out of these companies, thirteen (13) interviewees volunteered to participate in in-depth interview sessions. These individuals are knowledge workers ranging from junior, middle and senior levels in these organizations. The interview session for each individual lasted about 20 to 40 minutes. During the interview session, a briefing was given on the objective, background and also an overview of this research before the interview session began. During the interviewee session, the interviewees are encouraged to speak freely of any knowledge they feel like talking and sharing, especially about the knowledge sharing activity in their organization. All of the dialog activities took place during the interview session was guided by the interview protocol prepared beforehand by the interviewer. All the questions listed are relevant to the selected factors in the case investigation. The interview sessions conducted were able to gather and understand the interviewees' perspective of the study. The interview sessions identified key points that are found useful for the objectives of the research. The final part of the interview session was to ensure the interviewees that the information they have shared will be strictly confidential. These entire interview sessions were voice recorded except one interviewee was recorded with notes. The 13 interview sessions were done on five (5) different days within two (2) weeks. A letter of invitation is sent to each interviewee to invite him/her to agree to take part in the interview session together with a letter of acknowledgement and detail of the research project.

3.5 Data Analysis Techniques

Several analysis techniques have been used in this research work. Descriptive statistics is used to understand the behavior of the data collected. Means and standard deviation are good to understand what participants think and feel when they respond toward questions asked by researchers. Keywords from the interview content are classified and grouped. Frequency of keywords is compiled. These frequencies can be used as an indication to show the importance of some key highlights. Relationships of facts are studied. Summary of the interview content is tabulated in order to understand the importance of factors in the organizational knowledge sharing among these knowledge workers in their organizations.

4. Analysis of Interview Responses

The following section describes the flows and protocols used in the interview activities took place in this research. Table 1 illustrates the issues to be investigated when the interview sessions took place. Questions in the interview have been designed to solicit facts that will explain the goals of the research.

Issues to be investigated
To investigate Information Technology usage and knowledge sharing activity in the organizations
To investigate Learning Strategy and knowledge sharing activity in the organization
To investigate Reward and knowledge sharing activity in the organization
To investigate Trust and knowledge sharing activity in the organization
To investigate Outcome Expectations and knowledge sharing activity in the organization
To investigate Affect and knowledge sharing activity in the organization

Table 1: Category of questions designed for the interview sessions with the participants

4.1 Profiles of Interviewees

The entire interview session comprised of thirteen (13) individuals, six (6) are male and seven (7) are females. These interviewees come from five (5) different organizations, Sunway University Tun Hussein Onn Library (THOL), Sunway Pyramid Management, United Overseas Bank (UOB), Hilti Malaysia, and Ernst & Young (E&Y). THOL is a library within Sunway University, is a company of the Sunway Group of companies. Sunway Pyramid Management is also a business arm of the Sunway Group of companies which focuses on retail business and operates a number of shopping malls. On the other hand, THOL manages library for Sunway University, a business unit of Sunway Education Group. UOB is a Singaporean banking organization headquartered in Singapore with branches in Malaysia. Hilti Malaysia is a subsidiary of the Hilti Group, the organization provides technological products, systems and services to the global factorion professional innovative solutions with outstanding added value with the headquarters in Schaan, in the Principality of Liechtenstein. E&Y is an organization that provides assurance, tax, transactions and advisory services.

The seniority or years of working experience in his/her current job in the company of the interviewees is separated into junior, middle and senior levels. From the thirteen (13) interviewees, three (3) are from junior level, six (6) are from middle level and four (4) are from senior level staff.

4.2 Analysis on Information Technology Use

The "Information Technology Use" is a factor that tries to investigate and explain the type of KS tools used in their organizations, the usage intensity of the KS tools, benefits contributed by KS tools used and frequency of usage among individuals in the organizations. From the interview content, all of the interviewees believe that the current KS tools are able to improve the knowledge sharing activity in the organization. Mr Salleh commented that *"working knowledge is being documented"* during the interview. As knowledge can be retrieved with the current KMS and that help the execution of the working process. Ms Swa responded this question by saying that *"information can be easily retrieved from the tools"*. For Ms Jasmine, she said that *"the tools are able to help her in communication and retrieve information from it"*. Out of thirteen (13) interviewees, four (4) of them said that *"there are room for improvements"*. In addition, Mr Ivan added that *"if there is a better tool, then it would encourage more knowledge sharing activity."*

From the thirteen (13) interviewees, only one (1) interviewee said that the current KS tools are *“not 100% sufficient, the tools can only help kick start 20% of the job”*, twelve (12) interviewees agree that the KS tools are sufficient, and two (2) interviewees added that it is only sufficient for the moment. Four (4) interviewees added that *“there is room for improvement”* and Ms Goh added that she is *“looking forward to better tools if there is”* to help her in her job and sharing knowledge with her staff.

From aspect of whether the KMS’s user interface is intuitive easy to use, all the interviewees agree that the user KS tools’ interface has been intuitively designed hence the tools are easy to use. Ms Chew added that *“although it is easy to use, it some might find it boring, especially the new generation”*. Mr Raj said that *“the tools could be improved, particularly the QMS system in the organization as it was developed many years back”*. Mr Raj and Mr Ivan both said that *“the new staffs require training in order to familiarize with the tools in the organization.”*

When interviewees are asked whether the KMS functions are sufficient for their day-to-day knowledge sharing needs, all the interviewees agree that the KS tools’ functions are sufficient for their knowledge sharing needs. Five (5) of the interviewees said that the tools can help them *“to get the job done”*. Mr Kee said that it is *“possible to have more improvements to the functionality”*, Ms Molly also added that she *“wishes for more improvements”*. Ms Carmen added that although the functions are sufficient, she finds it *“a little troublesome for external communications, she has no problems with internal communications”*.

From the thirteen (13) interviewees, seven (7) of them agree that Web 2.0 will be a better tool that can encourage them to share knowledge with others. The remaining six (6) interviewee said no to Web 2.0 systems, among the reasons given was *“distraction in the working environment”*, and *“confidentiality issues in the organization”*. This is quite true as Web 2.0 such as Facebook and Twitter are open to public, privacy settings might not be safe enough for companies with confidential information such as customer personal information. Mr Raj added that *“the current tools in his organization are already sufficient for his knowledge sharing needs”*, therefore he sees no good reason to introduce another tool in the organization.

4.3 Analysis on Learning Strategy

For this section, the first question put forward to the interviewees is whether the knowledge worker is willing to learn from and share with other colleagues. All the interviewees said that they are willing to learn from their colleagues, and they are willing to share with them. Ms Swa added that *“given the right mix of colleagues, there is no reason they are not prepared to share”*. Ms Swa, Ms Molly and Ms Goh said that *“they have not encountered such resistance before when requesting for information.”* Mr Raj also added that *“if his colleagues know something, they will conduct classes or share it through different means of tools”*. Ms Carmen commented that *“sometimes it is not the case of the colleagues not willing to share, it is the case of difficulty in getting the information if you do not know who to get it from”*.

On the question on whether there is any learning strategy implemented in their organizations, all the interviewees generally agree, except three (3) interviewees said that there is no learning strategy implemented in their organizations. Ms Swa said that her organization is *“by way of trial and error, nothing structured”*. Mr Ivan added that *“the learning strategy is depended on yourself”*. Ms Chew also said that *“they just share throughout when they work together, no learning strategy involve”*. Other interviewees said that their organizations do implement some forms of learning strategy. The interviewees said that there are plenty of training provided by their organizations for learning, internal

and external. They also have sharing session and discussion meetings where they share their experiences or the problems encountered during the week. Mr Kee added that *“they have a training centre to train employees about the organization knowledge and technical skills to perform better for their jobs”*.

Only one (1) interviewee said that his organization does not encourage discussion and knowledge sharing, at least not at his level when interviewees are asked about whether organizations encourage discussion and knowledge sharing among knowledge workers. Mr Choi said that *“the meetings and discussion session only involve personnel who are at managerial level and above”*. Other interviewees said that their organizations do encourage discussion and knowledge sharing. Ms Wong said that *“there is a target of 3 day per staff training but they have more than that due to internal and external training”*. Mr Salleh said that *“the organization encourages knowledge sharing via formal or informal discussion, there is also monthly meeting attended by all head of section or units”*. Mr Raj added that *“his organization will have meeting to have discussion on problems encountered on a weekly basis”*. Ms Molly also said that *“the organization have many channels for learning, they also have a half an hour sharing session regularly”*. Ms Jasmine thinks that *“all organizations encourages discussion and knowledge, they have a committee within the organization that organizes weekly gathering or events for the employees to participate”*. Ms Chew added that *“there is successor planning involve, so knowledge sharing is very important”*.

4.4 Analysis on Reward

From the aspect of reward, participants were asked about whether rewards can motivate sharing of knowledge with others in the organizations, out of the thirteen (13) interviewees, nine (9) of them said that rewards can motivate them to share knowledge with others. The remaining four (4) said that it isn't reward that motivates them. Ms Wong commented that she *“doesn't believe in that”*. Ms Molly also added that *“getting people to be knowledge and they can work better”* is already a reward for them. Ms Goh said that *“at first she didn't think that reward will encourage her, but when she received her reward, she feels the satisfaction in it”*. Ms Chew said that *“if there is reward, people will definitely share more”*. From the responses given by these interviewees, this can be concluded that most interviewees agree rewards are motivator. For interviewees who disagree that reward can motivate knowledge sharing, they are employees that are in middle level and senior level.

From the thirteen (13) interviewees, six (6) of them believe that sharing knowledge can improve their chances of getting promotion/increment/bonus/incentive when this question was asked. Ms Chew added that *“not only through knowledge sharing you can improve these chances, but through capability. Because when you share knowledge, people will know that you have a certain ability to perform and eventually will get the chances of those rewards.”* The remaining seven (7) interviewees do not believe it so. The reason given by Ms Jasmine was *“to me knowledge sharing will improve my learning skill as well, the more I share the more I learn.”* Ms Carmen added that *“knowledge sharing helps you to learn more, it doesn't help you get rewarded.”*

On the question about whether a knowledge worker would share knowledge even without getting rewarded, all the interviewees say that they will share knowledge even without getting rewarded. Six (6) of the interviewees also mentioned that *“with or without reward they will also share knowledge, but with reward will be added value”*. Ms Goh also says that *“it would be an encouragement to share more knowledge with there is reward at the end of the day”*.

4.5 Analysis on Trust

Only five (5) interviewees do not trust the information provided by their colleagues. The remaining eight (8) interviewees trust the information provided by their colleagues. Although they trust the information provided by their colleagues, they will still perform verification. This shows that even they trust information solicited, they will do verification and their trust is based on a set of operational flow and good corporate governance. Six (6) of the interviewees mentioned that the information obtained also depended on the source of the information as well. If the source is deemed reliable, then they will trust them. Ms Wong and Ms Molly added that *“although they trust their colleagues, but sometimes when the work needed to be submitted to higher level, they will still do some checking”*. Mr Salleh said that *“there is a different trust level among people, some he trust more, some he trust less, but at the end there still need to be some sort of checking and verification”*. Only Mr Raj said that *“if it is official business then it is reliable”*. Mr Kee said that *“once I obtain the information, I will verify before proceeding, no matter whom.”*

Six (6) out of the thirteen (13) interviewees do not trust the information they share with others will not be misused. Seven (7) interviewees trust their colleagues and they will only use the information for prescribed or intended reason. Three (3) of the interviewees said that they only *“share sufficient information required to get the job done”*. Ms Jasmine said that *“it is depending on the recipient, she cannot control the recipient whether they will misuse the information or not.”* Ms Wong added that *“you have to trust, but if the trust is broken and you find out, then next time you have to be careful”*. Ms Carmen added that *“she needs to constantly remind that the information provided is confidential and cannot be used for other purposes or share with others.”* Mr Salleh also added that *“the information that we share is based on authorization, once we sent the information it is up to them to do anything with it.”* Mr Raj and Mr Cheok both said that *“if its work related then can trust”*.

Question about whether trust is a motivator for knowledge worker to share knowledge with others, only one (1) interviewee said that trust cannot be a motivator for knowledge sharing with others, the other twelve (12) interviewees agree with the question. Ms Goh also added that *“trust is very important, people that I trust I can share more knowledge compare to the people that I cannot trust.”* Ms Carmen also said that *“trust level between the people is high then she will share more”*. Mr Cheok also said that he will *“share more if there is trust within the working environment.”*

Seven (7) from the thirteen (13) interviewees said that trust is an issue. Six (6) interviewees think that it is not an issue in their organizations. Ms Molly said that *“it is not an issue so far, because she has not encountered people misusing or deliberately spreading false information”*. Mr Cheok said that *“in his organization, people will share whatever they know, they will not keep the information to themselves.”* Ms Wong added that *“if I can trust the person to do the work, I will share the knowledge with the person, if I do not trust the person, I would only provide sufficient information”*. Mr Ivan said that *“within the same department it is not an issue, but outside of the department it may be an issue.”* Mr Kee and Ms Goh said that *“it is a very big issue, they only share knowledge based on different trust level”*.

From the thirteen (13) interviewees, only three (3) of them do not see knowledge sharing with others as an investment for the future when the question asks about whether all perceives knowledge sharing with others as an “investment” to be due in the future. Ms Molly said that *“I share knowledge so that people can work better in the working environment, not for investment purposes”*. Ms Chew said that *“when I share knowledge, it is based on my expertise, I never think it as an investment, I just share whatever I know.”* Mr Cheok said that he doesn’t mind if the person he shared knowledge with doesn’t

want to help him. The remaining interviewees see it as an investment. Ms Wong added that *"I share knowledge with the intention of knowledge retention in the organization, eventually others will take over the job"*. Mr Kee said that *"I help others and I expect them to help me as well"*.

4.7 Analysis on Affect

This section asks about the role of affect and its influence toward the organizational knowledge sharing in the organizations. The first question asks whether a knowledge worker shares knowledge if one has a bad day at work.

From the thirteen (13) interviewees interviewed, only Mr Choi said that he will not share knowledge if he is having a bad day at work. The other twelve (12) interviewees said that they will still share knowledge. Ms Swa said that *"it doesn't affect me"*. Mr Salleh added that *"it is because of duty we have to share, bad mood or good mood, we still have to share."* Mr Raj and Mr Ivan said that *"time will play a factor as well"*. Ms Molly said that *"I will still share knowledge, maybe I will not be as nice as I used to."* Mr Kee said that *"we must work as professional, even we are not in a good mood, when people ask for something, we have to share"*. Ms Goh added that *"although I will still share knowledge, but the information I provide may be dangerous for the receiver, because I will not put effort into sharing the knowledge."* Ms Chew said that *"my emotion will affect my judgement on knowledge sharing, not only on knowledge sharing, towards people as well"*. Ms Carmen also said similar statement, she said that *"the tone will be different, the information shared will not be that much as well"*. Mr Cheok added that *"the information shared will not be that much even though he will still share."*

The next question asks whether when one has a good day, would the chances that one shares knowledge with others be higher. Most of the interviewees said that the chances of sharing knowledge with others will be higher on a good day, only two (2) interviewee said it will remain the same. Ms Swa and Ms Molly reasoned with *"it is more of a need based, not sharing because of the mood, I will treat it professionally."* Ms Wong admits that she will be *"more talkative, and the chances will be higher."* Some of the interviewees also said that not only the chances will be higher, the information shared will be more as well.

The last question on the role of affect put forward to the interviewees as whether a knowledge worker's mood affect his or her willingness to share knowledge with others.

From the thirteen (13) interviewees, only three (3) said that the mood will not affect their willingness to share knowledge with others. Ms Wong reasoned with *"we are human, we have mood, but will not try to let mood affect me, and I will share knowledge in good or bad mood."* Ms Swa said that *"I will not allow the mood to determine the material that she wants to share, whatever I need to do I will do, whatever I need to share I will share"*. The remaining interviewees said that it will affect either a little or a lot, depends on the individual. Mr Salleh added a statement and said that *"we are all human after all"*.

4.8 Analysis of Result and Discussions

This exploratory research attempted to introduce the role of affect as a factor besides other organizational and people factors into this research to understand the influence of these factors toward knowledge sharing in the organizations.

The outcomes of the research findings highlight that the Information Technology Use on KS tools functions need to be more intuitive and interesting and external communication capability need to be more efficient, As for using Web 2.0 as KS tools, there is a mix responses among interviewees where almost half of the responses agree to use Web 2.0 as KS tools but the other half don't seems to support it due to security, sufficiency and other policy factors. As for Learning strategy, participants express that they are happy to share knowledge on the job. However, very few participants said that there is proper learning strategies implemented the organizations. As for Reward, responses from interviewees mostly agree that rewards are motivator. For interviewees who are at middle and senior level, they disagree that reward can motivate knowledge sharing. On Trust, findings highlight that policy and procedures, validation and source of the information are three key considerations that provide the level of trust on the knowledge obtained and reliability. All the interviewees said that they do not expect to get any recognition or socially recognized rewards in return for knowledge they share with others. As for the element of affect, most of the participants highlight that if they are emotionally unpleasant they either provide very little responses on queries forwarded to them, don't entertain colleagues, or postpone their responses. The findings of this research provide a set of guidelines to knowledge organizations that have faced failure in their effort of instilling knowledge culture into their organizations to improve their success rate in their future undertakings.

5. Possible Future Research Works

Future research works can look into more factors that are relevant to organizational knowledge sharing problems in domain specific industry such as information technology products and services or construction. This research provides a foundation to understand better influence of factors toward organizational knowledge sharing. However, the number of participants and organizations is still small. A larger number of organizations and knowledge workers taking part will provide better understanding different factors and their importance in the study of knowledge sharing. To provide more in-dept analysis, a questionnaire survey could be used to using a larger sample to analyse the factors chosen in this research in quantitative way.

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