

Factors Influencing Employee Knowledge Sharing Capabilities in Electronic Government Agencies in Malaysia

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Abstract

Effective managing and sharing of knowledge has the power to improve individual's lives and society. However, research has shown that people are reluctant to share. Knowledge sharing (KS) involve not only our knowledge, but a process of giving and receiving of knowledge with others. Knowledge sharing capabilities (KSC) is an individual's capability to share experience, expertise and know-how with other employees in the organization. Previous studies identified many factors affecting KSC either in public or private sectors. Upon a critical review on factors affecting KS and factors affecting KSC, this paper attempts to examine the factors that have been cited as significant in influencing employees KSC within Electronic Government (EG) agencies in Malaysia. Two capable factors that are considered in this study are technical factor and non-technical factor. This paper proposes an integrated conceptual framework of employees KSC which can be used for research enhancement.

Keywords: Knowledge Management, Knowledge Sharing, Knowledge Sharing Capabilities, Technical Factor, Non-Technical Factor.

1. Introduction

Today, information and knowledge is the force powering our societies and our economy. Successful societies and economies will depend on how well they enable these valuable assets to be shared, how well they learn from the knowledge they hold, and how they use it to create new value. Both, the public and the private sectors emphasized on the importance of KS for organizational performance and effectiveness (Kim and Lee 2005). "*Knowledge can help us unlock the potential of our organizations, but only if all of us are prepared to change the way we think and the way we act*" (De Cagna, Jeff 2002). There should be a change from hoarding knowledge to sharing knowledge. Furthermore, knowledge is a central resource of government service. Effective KS among employees is a

significant public management challenge for providing an excellent government (Kim and Lee 2005).

In Malaysia, the importance of knowledge was first expressed by the former Prime Minister, Tun Dr. Mahathir in 1991. He highlighted the need to transform the economy of Malaysia towards a knowledge-based economy in order to achieve vision 2020 (Yap and Rosmaini 2008). Najib Razak, the recent Prime Minister in his keynote address at the International Conference of Increasing e-Governance through Knowledge Management (EG2KM), asserted that knowledge management (KM) should be adopted as an effective tool to improve public sector service delivery. To respond to such appeal, the Malaysian Administrative Modernization and Planning Unit (MAMPU) takes effort by implementing knowledge management initiatives in public sector to enable the government to manage and restructure the knowledge possessed by various government agencies. MAMPU has developed 'knowledge bank' structure in Public Sector Information Technology and Communication Framework in order to ensure that KS takes place among government agencies (Ismail 2006).

KS requires the dissemination of individual employees' work-related experiences and collaboration between and among individuals and subsystems within the organization (Kim and Lee 2005). However, KS does not come easy. It needs the capability and the willingness of individuals to engage in KS which is better known as KSC. The ability to create knowledge and diffuse it throughout an organization is recognized as a major strategic capability to gain competitive advantage (Roth 2003). However, literature has identified numerous barriers on KS, including knowledge tacitness (Teece 1986), limited absorptive capacity of knowledge receivers (Szulanski 1996), perceptions of competition by knowledge providers (Hansen, Mors and Lovas 2006; Tsai 2002), and lack of trust between providers and receivers (Levin & Cross 2004). While, some researchers examine factors influencing KS and categorized them into three factors; individual, organizational and technological (Van den Brink 2003; Riege 2005; Bakhari and Zawiyah 2008). KS

nor KSC will not succeed unless the factors affecting KS and KSC are identified.

2. Literature Review

This literature review examines recent research studies on KS, KS models, and KSC. Factors affecting KS in Malaysian public sectors and factors affecting KSC in five public and five private sectors in South Korea will be analyzed. The analysis is used to construct a conceptual framework on the capable factors influencing employees KSC within EG agencies in Malaysia.

2.1 Knowledge Sharing (KS)

Sharing knowledge is one of the processes in KM (Davenport and Prusak 1998). It is “the process of transferring knowledge from a person to another in an organization” (Park and Im 2003). This transfer could be between individuals, from an individual to a group, within a group, between groups, sections or departments to help each other in accomplishing different tasks and functions in organizations. KS is fundamental to generate new ideas and develop new business opportunities through socialization and learning process of knowledge workers. As a result, KS will affect organization’s long-run performance and competitiveness (Du et al. 2007).

Knowledge shared is either tacit or explicit knowledge. Tacit knowledge resides in the mind of human being. Tacit knowledge is deeply rooted in action, procedures, routines, commitment, ideals, values, and emotions (Nonaka, Toyama, & Byosiére 2003). On the other hand, explicit knowledge is systematic knowledge often in written form such as books, documents and reports. Explicit knowledge can easily be codified, stored, and transferred across time and space (Lam 2000). KS enabled individual knowledge either tacit or explicit to be shared with others in the organization in many forms such as through telephone, chatting, and internet. Never the less, due to varied individual behaviour, KS cannot happen easily. To solve the problems, previous researchers have identified models and frameworks to explain on KS behaviour.

2.2 Knowledge Sharing Model

Model is a reality representation. Models could be used to improve understanding on factors affecting KS in organizations. Models related to KS are *SECI Model* (Nonaka and Takeuchi 1995), *Model for Best Practice* (O’Dell and Grayson 1998), *Knowledge Transfer Model* (Inkpen and Dinur 1998), *Organizational Knowledge Sharing Model* (Wang 1999), and *Culture Based Knowledge Sharing Model* (Lodhi 2005). This study

identified two models that are relevant to factors influencing KSC in organization which were constructed by Wang (1999) and Lodhi (2005).

Based on *SECI Model* (Nonaka and Takeuchi 1995), Wang (1999), proposed a basic concept of knowledge sharing model in organization. The important sources of this model are individual, team, and organization and it involves two phases: vertical (the change between explicit and tacit knowledge), and horizontal (the movement of knowledge from individuals to team and to organization). According to Wang (1999), knowledge originally belongs to every individual in organization. The exchange of knowledge is a social process between individuals and individuals and organization (Juhana et al. 2006). During KS, knowledge conversation process occurred through socialization and combination. Through the process, tacit knowledge of individuals will be shared and become tacit knowledge for other party. The same process occurred for explicit knowledge. Then, knowledge would be externalized and internalized in individual and organization.

Lodhi (2005), proposed a *Culture Based Knowledge Sharing Model* to overcome the lack in previous models in distinguishing between knowledge and knowledge assets. He believes, the only source of knowledge in an organization is their employees. While, books and manuals, and etc. represent knowledge assets, they are not truly knowledge sources. Four factors influencing this model are individual attitude, group attitude, communication channel and organizational policies. This model considers individual attitude as a starter in gaining new knowledge from others. With the good individual attitude, knowledge will be transferred to colleagues in a group. Interaction between individuals will form a group, whereby good individuals will form good groups. Organizational policies helped in developing a corporate culture to support KS activities and innovation in an organization. Both, Wang (1999) and Lodhi (2005) models are very related to this study, which emphasized individuals as the main factor affecting KS other than organizational and technological factor.

2.3 Factors Affecting KS in Malaysian Public Sector

In today’s business world, KS is very powerful because of the benefit to the sharers (giver and receiver), and the organization. But, the challenge is to get people to share their knowledge. In some organizations, sharing is natural, but in others the old dictum “knowledge is power” reigns (Skyrme 2002). To make it happen, it must be supported by several factors such as social factors; “trust” (Schrader 1990; McDermott and O’ Dell 2001; Yang 2004), “care” (von Krogh 1998), and “emotional commitment and the quality of the relationship” (Weiss 1999), and technical

factors; “ICT infrastructure” (Goh 2002; Ikhsan and Rowland 2004; Bakhari and Zawiyah 2008) and “ICT tools/IT applications” (Willcoxson 2003; Hishamuddin et al. 2004; Kim and Lee 2006).

Several studies on KM has been conducted, but studies pertaining to KS in public organization in Malaysia is scarcely undertaken (Syed Ikhsan & Rowland 2004). Studies focusing on KS in Malaysia public sector that have been identified are; KS among Small and Medium Enterprises (SMEs) in Malaysia (Low et al. 2003), factors affecting KS in three selected higher institution and its impact on performance (Norizah et al. 2005), KS in public sectors from business process management perspectives (Hartini, Normala and Sobry 2006), and factors affecting knowledge sharing in public organizations in Malaysia (Bakhari and Zawiyah 2008). Table 1 summarized a few KS factors being derived from the past researches. Three domains that have been identified as major factors contributing to KS in Malaysian public sector are individual factor, organizational factor, and technology factor. These factors will be combined with the factors affecting KSC to develop a fit integrated framework of employees KSC within EG agencies in Malaysia.

2.4 Knowledge Sharing Capabilities (KSC)

KS is the base of knowledge application and knowledge creation. Its capability strength decides the efficiency of knowledge application and knowledge creation. KSC of organization is the extent that one organization can effectively share its own kinds of knowledge resources (Fan et al. 2008). While, employee KSC is the ability of employees to share their work-related experience, expertise, know-how, and contextual information with other employee through informal and formal interactions within or across team or work units (Kim and Lee 2006). This paper focuses on employee KSC. Despite, the considerable number of studies on KS, no study has been done specifically on KSC in Malaysia. KSC differs from KS. Employees KSC emphasized on the capability or the willingness of each employee to share, especially tacit knowledge such as experience, expertise, and know-how with their colleagues in organization. Different organizations will have different KSC. Table 2 attempts to further clarify the differences between KS and KSC.

Table 1: Factors Affecting KS in Malaysian Public Sector

<i>Authors</i>	<i>Factors</i>
Low et al. (2003)	<ul style="list-style-type: none"> • Technology • Culture • Incentive • Management System • Leadership

Norizah et al. (2005)	<p><u>Cultural Factors:</u></p> <ul style="list-style-type: none"> • Sociability • Solidarity • Power Distance <p><u>IT Factors:</u></p> <ul style="list-style-type: none"> • Availability of IT Infrastructure • Availability of IT for KS • Expert vs. Distributed Model • Problem of Codification <p><u>Communication Factors:</u></p> <ul style="list-style-type: none"> • Trust • Face to face Interaction • Reciprocity • Repute • Altruism • Acknowledgement <p><u>Organizational Support Factors:</u></p> <ul style="list-style-type: none"> • Management Support • Rewards • Mentoring • KS to be included as part of work process
Hartini, Normala, Sobry (2006)	<ul style="list-style-type: none"> • Individual attitudes • Organizational Environment • Reward System • ICT
Bakhari and Zawiyah (2008)	<p><u>Individual Dimension:</u></p> <ul style="list-style-type: none"> • Awareness • Trust • Personality • Job Satisfaction <p><u>Organizational Dimension:</u></p> <ul style="list-style-type: none"> • Structure • Culture • Reward & Recognition • Work Process • Office Layout <p><u>Technological Dimension:</u></p> <ul style="list-style-type: none"> • ICT Tools • ICT Infrastructure • ICT know-how

2.5 Factors Affecting Employee KSC in Five Public and Five Private Sectors in South Korea

Employee KSC requires effort on the individual’s part to share. Bartol and Srivastava (2002) identified four mechanisms for the sharing of individual knowledge within organizations: a) contributing knowledge to organizational databases; b) sharing knowledge in formal interactions within or across teams or work units; c) sharing knowledge in informal interactions; and d) sharing knowledge within communities of practice (i.e., voluntary forums created around a particular topic of interest). Besides, there are couples of motivational factors that have contributed to improve KSC among individuals. Stenmark (2000), stated

that without strong personal motivation, people are unlikely to share their knowledge.

The study by Kim and Lee (2006) on “The Impact of Organizational Context and Information Technology on Employee Knowledge Sharing Capabilities” in five public and five private sectors in South Korea is noted as the pioneer study on KSC. Figure 1 summarized the result of the study.

Table 2: Different Definition Between KS and KSC

KS	vs	KSC
KS is one of the process of KM and a main component of KMS. (Alavi and Leider 2003; Ryu, Hee and Han 2003)		Employee KSC is the ability of employees to share their work-related experience, expertise, know-how, and contextual information with other employee through informal and formal interactions within or across team or work units (Kim and Lee 2006).
KS is a process between individuals and will increase if individuals are willing to share. (Nonaka and Takeuchi 1995; Halal 1997; Ryu, Hee and Han 2003)		
KS is a process where individuals exchange/share knowledge (tacit and explicit). (Hooff et al. 2003; Bakhari and Zawiyah 2008; Wen Bao Lin 2008)		

The impact study was only on the organizational factors (organizational culture and organizational structure) and information technology (IT) factor, but lack on the individual factor. A critical review on factors affecting KS in Malaysia identified three domains which are individual factor, organizational factor, and technological factor. This paper attempts to fill this gap by adding individual factor for the study. Individuals are the heart of organizational knowledge creation because, individuals create and share knowledge (Lee and Choi 2003). Without individuals (employees), knowledge will not be invented in an organization (Coleman 1998). Although the sophistication of IT and computer network has facilitated knowledge sharing, employees play an important role to ensure the success of organization knowledge and information sharing (Bartol and Srivastava 2002; Nonaka 1994). This paper will examine the three domain factors; individual, organizational (culture and structure) and technology that have been cited as significant influences on employees KSC within EG agencies in Malaysia.

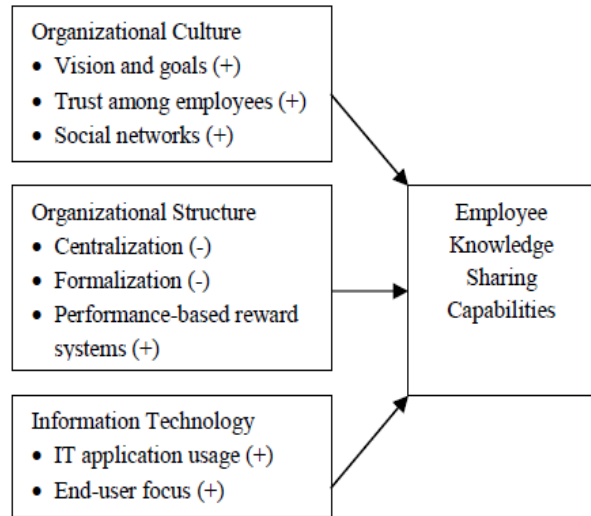


Fig. 1 Research Model of Employee KSC (Kim and Lee 2006).

3. The Capable Factors Influencing Employee KSC Within EG Agencies in Malaysia

KS is the core of KM in organizations (Mi and Sun 2003; Lu and Chen 2003). While, employee KSC of organization is an important issue in the KS field. The ability to share knowledge between organization units and departments contribute immensely to the performance of the organization (Argote et al. 2000). Fan et al. (2008) noted that researches on KS are developed from three aspects: (1) Analyzing relationships between knowledge sharing and organization performance; (2) Discussing barriers, causes of formation and corresponding means about knowledge sharing; (3) Studying methods, tools and implementation technologies about knowledge sharing of organizations. This paper has identified two capable factors influencing employees KSC within EG agencies in Malaysia. The two capable factors are technical capability factor and non-technical capability factor. The technical capability factor is the information technology provided for organization knowledge sharing while the non-technical capability factor is the situation of institution arrangement, incentive mechanism and culture, which provide services for organization knowledge sharing (Fan et al. 2008).

This paper identified technology domain as technical capability factor. Technology factor provide two basic capabilities: integrating knowledge and creating network. Technology has significantly increased the capabilities to share knowledge in organizations (Fan et al. 2008). While, individual domain and organizational domain (organizational culture and organizational structure) are classified as non-technical capability factor. Non-technical capability forms a “soft environment” to support the KSC in organizations. Individuals play a crucial role in KSC because of the knowledge that is embedded in individual. Two organizational components frequently mentioned in

the literature are organizational culture and organizational structure (Syed Ikhsan and Rowland 2004; Kim and Lee 2006; Lin 2008; Bakhari and Zawiyah 2008). If one organization spends large amount of money to purchase IT equipments, but without institution arrangement, incentive mechanism and culture that serves for it, the efficiency in utilization of IT equipments is not high and the organization knowledge sharing capabilities is not strong (Fan et al. 2008). The conceptual framework will be developed to show the relationship between the two capable factors with employees KSC in an organization.

4. Conceptual Model

There are many theories to explain KS some of which include, Social Exchange Theory (SET), Social Capital Theory (SCT), Social Cognitive Theory (SCT), Expectancy Theory (ET), Theory of Reasonable Action (TRA), Theory of Planned Behavior (TPB), and Knowledge-Based Theory of the Firm (KBT). The KBT also known as Knowledge-Based View of the firm (KBV) theory (Bakhari 2010). This theory considers knowledge as the most strategically significant resource of the organization. Organizational effectiveness is an outcome of knowledge creation, explication, communication, and application (King 2003). The framework for this study is derived from the in-depth study on KS models, factors affecting KS and factors affecting KSC. Previous researches have examined a range of antecedent factors on KS and KSC, and only considered the factors that empirically give significant or positive impact towards KSC. The negative impact has been eliminated to ensure the high validity and reliability of each construct. Four domains identified as major factors contributing to KSC are individual, organizational culture, organizational structure, and technology. The literature on KS recognize the influence of individual, organizational, and technology factors on employee KS activities (Lee and Choi 2003; Connelly and Kelloway 2003; Taylor and Wright 2004).

Two basic capable factors to form the KSC of organization are technical capability and non-technical capability. Both of them are important and cannot be ignored (Fan et al. 2008). In this study, technology domain has been classified as technical factor. While, individual, organizational culture, and organizational structure domains are classified as non-technical factor. Figure 2 illustrates the proposed conceptual framework for the study.

4.1 Dependent Variable

The dependent variable for the study is ‘knowledge sharing capabilities (KSC)’. It is define as the ability of employees to share their work-related experience, expertise, know-how, and contextual information with other employee through informal and formal interactions within or across team or work units (Kim and Lee 2006). Interaction

between employees with various knowledge increases organization's ability to create knowledge and innovation far greater than an individual employee can access (Cohen and Levinthal 1990). In this study, the two factors influencing employees KSC within EG agencies in Malaysia are technical factor and non-technical factor.

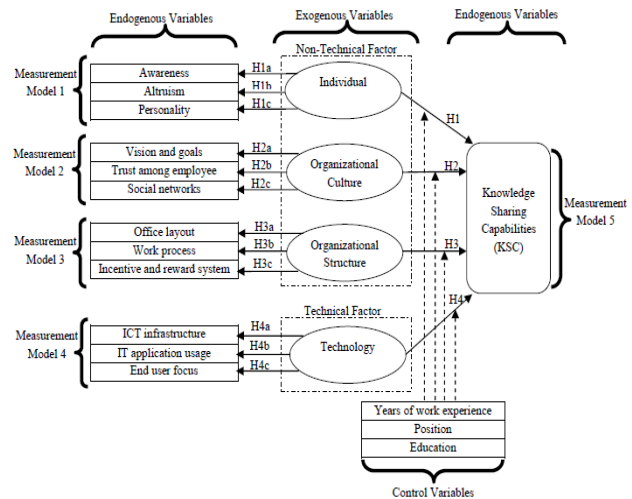


Fig. 2 A Conceptual Framework of Employees KSC within EG Agencies in Malaysia.

Technology as technical factor and KSC are closely linked. ICT infrastructure is capable of facilitating knowledge flow and eliminating barriers to communication within organization. IT application systems, such as groupware, online databases, intranet, virtual communities, and etc. can facilitate KS processes. For example, IT applications enable rapid search, access and retrieval of information, and can support communication and collaboration among organizational employees (Huysman and Wulf 2006). Besides, within KS, the use of IT allows firms to expand available social networks by overcoming geographical boundaries, and thus achieving more effective collaborative activities (Pan and Leidner 2003).

Individual domain and organizational domain (organizational culture and organizational structure) are non-technical factors. Many scholars believe that institution arrangement, incentive mechanism and organizational culture play an important role in organization's knowledge sharing (Fan et al. 2008). Individuals as employees in an organization are the core component in implementing KS practices. Employee's knowledge exist and expand through social interaction between employee and their creative activities (Nonaka and Takeuchi 1995). Organizational culture of an organization often link with KS (Carneiro 2000). Organizational culture is one of the biggest challenges to KS (Skyrme 1997). Organization which practiced cooperative culture and partnership among employees

would be more successful in knowledge sharing compared to organization in which employee hoards knowledge and compete between one another (Elliot and O'Dell 1999). Organizational structure also influences KS. A flexible organizational structure encourages knowledge sharing and collaboration across boundaries within the organization, while a rigid structure often has the unintended consequence of inhibiting such practices (Sandhwalia and Dalcher 2008). Organizational structure is capable of facilitating knowledge flow. The flow is shaped by the organization's policies, processes, system of rewards and incentives (Leonard 1995).

4.2 Independent Variable

The independent variables are divided into four domains; individual, organizational culture, organizational structure, and technology. Each domain is measured by several components selected from Table 1 and Figure 1. The components that have positive impact are selected, while the components that have negative impact has been eliminated.

4.2.1 Individual

Three components of individual domain are awareness (Lee and Al-Hawamdeh 2002; Bakhari and Zawiyah 2008), altruism (Kurz 1997; Davenport and Prusak 1998; Christensen 2005), and personality (Van den Brink 2003; Awad and Ghaziri 2004; Bakhari and Zawiyah 2008). Thus, the hypothesis proposed is:

H₁: Individuals positively influence employee KSC.

Awareness among individuals represents the first phase of KS initiative in organization. The awareness about the importance of knowledge sharing is considered as an attitude that every employee should have including the top management (Van den Brink 2003). The concept of altruism is also known as "enjoyment in helping others". Knowledge workers may be motivated by relative altruism owing to their desire to help others (Constant et al. 1994; Davenport and Prusak 1998). Previous research shows that employees are intrinsically motivated to contribute knowledge because engaging in intellectual pursuits and solving problems is challenging or pleasurable, and because they enjoy helping others (Wasko and Faraj 2000; Wasko and Faraj 2005). As a whole, an individual's personality plays a significant role in KS. Personality refers to values, attitude, mood and emotion (Van den Brink 2003). Individuals who are extroverts, self confidence and feel secured have more tendency to share their experience and knowledge compared to those who are introverts and self-centred (Awad and Ghaziri 2004). Based on these finding, the sub-hypothesis proposed are:

H_{1a}: The awareness among individuals on sharing knowledge positively influences employee KSC.

H_{1b}: The altruism attitude among individuals positively influences employee KSC.

H_{1c}: The personality of individuals positively influences employee KSC.

4.2.2 Organizational Culture

In organizational culture domain, three components are selected; vision and goals (Gold, Malhotra, and Segars 2001; Kanter, Stein, and Jock 1992; Leonard 1995), trust among employee (Kanter, Stein, and Jock 1992; O'Dell and Grayson 1998; Von Krogh 1998; Bakhari and Zawiyah 2008), and social networks (Leonard and Sensiper 1998; O'Dell and Grayson 1998; Tsai 2002). Thus, the hypothesis proposed is:

H₂: Organizational culture positively influences employee KSC.

Organizational vision and goals lead to generate a clear organizational purpose. Organizational vision, mission and value embody the culture of the organization and determine the types of knowledge that are desired and the types of knowledge related activities that are encouraged (Leonard 1995). A clear organizational vision and goals also engender a sense of involvement and contribution among employees (Dyer 1997; O'Dell and Grayson 1998). Another important component in organizational culture is trust. Trust among employees will promote active KS behavior. Such active KS behavior enhances effective communication by empowering members or an organization to freely share personal knowledge and concerns (Von Krogh 1998). The high levels of employee trust can lead to better knowledge sharing, shared goals, and lower transaction costs (Cohen and Prusak 2001). KS occurs within organization through social networks. Social networks indicate communications, dialogue, and individual or group interactions that support and encourage knowledge-related employee activities (Leonard and Sensiper 1998; Levinthal and March 1993). The ties among individuals within social networks can facilitate KS and enhance KSC among employees in organization. Based on these finding, the hypothesis proposed are:

H_{2a}: The clear understanding of organizational vision and goals among employees positively influences employee KSC.

H_{2b}: The high level of trust among employees positively influences employee KSC.

H_{2c}: The high level of social networks among employees positively influences employee KSC.

4.2.3 Organizational Structure

Organizational structure domain consist of three components; office layout (Lee and Al-Hawamdeh 2002; Bakhari and Zawiyah 2008), work process (Lee and Al-Hawamdeh 2002; Norizah et al. 2005; Bakhari and Zawiyah 2008), and incentive and reward system (Norizah et al. 2005; Jones 2001; Lee and Al-Hawamdeh 2002; Bock e al. 2005; Kim and Lee 2006; Juhana et al.2009). Thus, the hypothesis proposed is:

H₃: Organizational structures positively influence employee KSC.

Today, office layout becomes important issues of KS in organizations. Davenport and Prusak (2000), suggested that corporate planner, architects, academics, and executives should give consideration and creative thought to the issues of office design which hinder corporate world citizens from working with knowledge. A good office design should create a work environment that encourages interaction among employees. A good example is the use of open workspace (Jones 2005). The KSC among employees will be more effective if, it is included in the work process. According to Anderson (2000), it is difficult to capture knowledge because people refused to contribute knowledge or are not capable to deliver their knowledge. Anderson suggests the best way to make people capable to share, which is to contribute knowledge as part of their work process. Incentive and reward systems give a high impact on KS. Based on social exchange and social capital theories, organizational rewards such as promotion, bonus, and higher salary has been shown to be positively related to the frequency of knowledge contribution (Wang and Noe 2009). Many scholars believed, incentive and reward systems that encourage knowledge management activities among employees play an important role as an enabler (Bartol and Srivastava 2002; Bock and Kim 2002; Ko 2003; Robertson and Hammersley 2000; Yu, Kim and Kim 2004). Based on these finding, the hypothesis proposed are:

H_{3a}: The office layout of the organization positively influences employee KSC.

H_{3b}: The contribution of knowledge as part of the the work process positively influences employee KSC.

H_{3c}: The implementation of incentive and reward system in organization positively influences employee KSC.

4.2.4 Technology

There are three components that embodies the technology domain; ICT infrastructure (Hishamuddin et al. 2004; Ikhsan and Rowland 2004; Bakhari and Zawiyah 2008), IT application usage (Willcoxson 2003; Hishamuddin et al. 2004; Kim and Lee 2006), and end user focus (Jarvenpaa

and Staples 2000; Hishamuddin et al. 2004; Kim and Lee 2006). Thus, the hypothesis proposed is:

H₄: Technology positively influences employee KSC.

ICT infrastructure that is in place will support KS activities. Technology infrastructure includes information technology and its capabilities which are considered to assist organization to get work done, and to effectively manage knowledge that the organization possesses (Hishamuddin et al. 2004; Holsapple 2005; Ko 2003; Okunoye and Karsten 2002; van den Hoof and de Ridder 2004). According to Chabrow (1999), knowledge sharing cannot happen in organization without technology infrastructure. The active use of IT applications in organization will influence employee KSC, because people are more comfortable to communicate online compared to face to face interaction. The common IT applications that support KS are internet, intranet, extranet, office automation systems, meeting systems, knowledge directories, knowledge-based systems, document management systems, and electronic publishing systems (Hishamuddin et al. 2004; Tan 2004; Willcoxson 2003). These IT applications will support a wide range of organizational tasks such as transactional, analytical, asset management process, development and innovation and creation (Willcoxson 2003). Another important component of technology related to KCS is the level of end user focus on the information system development (Kim and Lee 2006). The user-friendly systems will promote user acceptance and use to support KS. The designing and the delivering of a system that precisely addresses user needs is one of the most important factors affecting the benefit of the system (King 1999). Based on these finding, the hypothesis proposed are:

H_{4a}: The comprehensive ICT infrastructure in organization positively influences employee KSC.

H_{4b}: The IT applications usage in organization positively influences employee KSC.

H_{4c}: The level of end-user focus toward the IT applications positively influences employee KSC.

4.3 Control Variable

Since, KS is very close to human, the study incorporates some issues related to individual behavior that hinders people from sharing the knowledge such as years of working experience, position, and education. These components are used as control variable for this study.

According to Watson and Hewett (2006) and Irmer, Bordia and Abusah (2002), a person's tenure in organization has a positive significant relationship with knowledge sharing. Constant et al. (1996), also found that individuals who work longer in an organization and have acquired higher

expertise are more likely to share useful knowledge needed by other employees. The work position of an individual in the organization also has influence on KS. Ardichvili et al. (2006), found that top managers and middle managers were not interested to participate in knowledge sharing activities. But, in some cases KS often occurs in mentoring relationship. The senior employees often become a mentor to the junior employees (Collin 2004). A study by Keyes (2008), indicated that education somewhat affect knowledge sharing. Employees with low level of education are less likely to share compared to the employees with high level of education. It may have been caused by pressure on the knowledge itself which often elaborated as material for organizational success (Nonaka 1991) and machinery to change world economy (Bell 1973).

5. Conclusion and Future Research

Concerning the importance of KS as a part of Critical Success Factor (CSF) in the implementation of KM in an organization, this conceptual paper proposed an integrative framework of the capable factors influencing employee KSC within EG agencies in Malaysia. The framework consist of two capable factors and four groups of domain; technical factor (technology) and non-technical factors (individual, organizational culture, organizational structure). This study will be followed by an empirical study to test the hypothesis and validate the model. It is believed that this paper will increase the understanding of KSC among employees in Malaysia public sector.

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