FACTORS INFLEUNCING KNOWLEDGE SHARING AMONG UNIVERSITY ADMINISTRATORS

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Specially dedicated to *my late husband, Ridzam bin Zainol*

I really miss you.

Al-Fatihah

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ABSTRACT

The purpose of the present study is to determine the factors that influencing knowledge sharing intention and behavior. This will clarify the reason of performing the action and also will reveal the willingness to perform knowledge sharing among university administrators in public universities. Variance of factors might influence people to perform and involve in certain actions as it is not easy to understand people's behavior. In this study, the influencing factors of knowledge sharing behavior among university administrators are investigated with reference to major behaviorist school theories such as Theory of Reasoned Action, Theory of Planned Behavior and Technology Acceptance Model. This research employed Theory of Reasoned Action (TRA) as the basis framework of the research design in order to investigate the individual factors (reciprocity, extrinsic rewards, self-efficacy and trust) and also organizational factors (fairness, affiliation and task interdependence) together with technological factor (controllability of ICT) towards knowledge sharing intention (KSI). The framework of this research is partially replicating a study of Bock et al., (2005). However, several variables were added in which are perceive usefulness, perceived ease of use, trust and interdependence. The sample data derived from 68 survey research collected from 127 number of respondents who are currently the Assistant Registrar Scheme in the job grade of N41 until the highest of job grade N54. Knowledge sharing intention is expressed as the dependent variable while the independent variables are Individual Factors (reciprocity, extrinsic rewards, self-efficacy, trust), Organizational Factors (fairness, affiliation and task interdependence) and also Technological Factor (controllability of ICT). The data was analyzed by using SPSS version 21.0 to do descriptive statistics and regression analysis. The overall results reveal that organizational factor is the most dominant factor that influences KSI among university administrators. Results also indicate that all influencing factors has significant, positive relationship in influencing knowledge sharing. The analyses confirmed that extrinsic reward is not one of the factors that influenced university administrators to share their knowledge.

ABSTRAK

Kajian ini adalah untuk mengenalpasti faktor-faktor yang mempengaruhi individu untuk berkongsi pengetahuan yang dimiliki. Dapatan dari kajian ini akan menjelaskan sebab perkongsian pengetahuan itu berlaku dan dalam masa yang sama mendedahkan tahap kesediaan pentadbir universiti sektor awam untuk berkongsi pengetahuan. Dalam kajian ini, faktor-faktor yang mempengaruhi perkongsian pengetahuan disiasat dengan merujuk kepada teori-teori utama tentang perlakuan individu seperti *Theory of Reasoned Action, Theory of Planned Behavior* dan juga *Technology Acceptance Model*. Penyelidikan ini menggunakan *Theory of Reasoned Action* sebagai rangka kerja asas bagi reka bentuk penyelidikan untuk menyiasat faktor-faktor individu (timbal balik, ganjaran ekstrinsik, keberkesanan diri dan kepercayaan) dan juga faktor-faktor organisasi (keadilan, hubungan sesama dan kebergantungan tugas) bersama-sama dengan faktor teknologi (kebolehkawalan terhadap kemudahan ICT) terhadap perkongsian pengetahuan. Rangka kerja kajian ini sebahagiannya mengadaptasi kajian Bock et al., (2005). Walau bagaimanapun, beberapa pembolehubah ditambah dalam kajian ini iaitu pandangan kepada kegunaan kemudahan, penggunaan yang mudah, kepercayaan dan kebergantungan tugas. Data dianalisa adalah berdasarkan kepada 68 responden daripada 127 soal selidik yang diedarkan di kalangan Penolong Pendaftar dalam gred kerja N41 sehingga yang tertinggi Gred N54 di UiTM Shah Alam. Niat berkongsi pengetahuan dinyatakan sebagai pembolehubah yang bersandar manakala pembolehubah bebas adalah Faktor Individu (timbal balik, ganjaran ekstrinsik, keberkesanan diri, kepercayaan), Faktor Organisasi (keadilan, hubungan sesama dan kebergantungan tugas) dan juga Faktor Teknologi (kebolehkawalan terhadap kemudahan ICT). Data dianalisa dengan menggunakan perisian SPSS versi 21.0 bagi mendapatkan statistik deskriptif dan analisis regresi. Keputusan menunjukkan bahawa faktor organisasi adalah faktor yang paling dominan dalam mempengaruhi perkongsian pengetahuan di kalangan pentadbir universiti. Semua faktor yang dikaji didapati mempunyai hubungan yang signifikan, positif dalam mempengaruhi perkongsian pengetahuan, manakala ganjaran luaran bukannya faktor yang mempengaruhi pentadbir universiti untuk berkongsi pengetahuan mereka.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Knowledge is common to everybody but how do we define knowledge?. Knowledge is neither data nor information, though it is related to both, and the differences between these terms are often a matter (Davenport and Prusak, 2008). Nonaka (1994) justified knowledge in the nature of truth by defining knowledge as "justified true belief". He then justified that knowledge should be created by human in relationship as the one of the knowledge characteristic. Knowledge then defined by them as "A dynamic human process of justifying personal belief towards the truth" (Nonaka and Toyama, 2006).

In the aspect of organization, Davernport and Pusak (2008) define knowledge as "Knowledge is a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knowers. In organizations, it often becomes embedded not only in documents or repositories but also in organizational routines, processes, practices, and norms".

Knowledge need to be managed in order to make organization more efficient. It is because knowledge management can be the tool for organization to remain survival and be the factor for maintenance of competitive strength (Maria Mårtensson, 2000). Therefore, an organization with a knowledge management capability will have the potential to be more efficient and will perform better. Many organizations are implementing knowledge management in order to sustain their competitiveness (Black and Synan, 1997).

Knowledge need to be shared to make it grow and alive as it will increase organization's flexibility to cope with unpredictable circumstances (Fu, 2004). Information will only be regarded as knowledge when it is communicated with others or actions are taken upon that information. Knowledge sharing is important for creating a new knowledge especially in an organisation for the purpose of improving performance and also solving problem.

Technological advancement made countries to create a knowledge-based economy atmosphere in order to transform the economy from the production-based economy. Malaysia has developed Knowledge-based Economy Master Plan as a way to develop Malaysia public sector into K-based Civil Service (Ministry of Finance, 2002). In reflect to this objective, Malaysia higher education is demanded to play role in producing knowledgeable manpower as a strategy to facilitate Malaysia moving toward Knowledge-based Economy (Ministry of Finance, 2002). This requirement made knowledge sharing in public higher education is important in order to produce knowledgeable manpower. Public higher education need to go beyond preparing knowledgeable manpower but need to play more vital role by preparing the platform for knowledge sharing and knowledge creation among the members. This is to ensure the success of achieving the knowledge-based economy.

Higher education institutions serve as a reservoir of knowledge and are no longer just providing knowledge to students. These institutions manage, blend, and share knowledge among the faculty staff themselves. Thus, knowledge sharing is inevitably challenging and an important concept in higher learning institutions. Universities are expected to be places where knowledge is shared freely among academicians. However, the reality shows that knowledge sharing is barely present within universities these days. This is evident by the fact that several higher learning institutions, particularly in the developed world have been receiving grants to implement knowledge management practices (Ramayah, 2013).

In addition to that, knowledge sharing is envisaged as a natural activity of the academic institutions as the number of seminars, conferences and publications by academics is far exceeding any other profession, signifying the eagerness of academics to share knowledge (Cheng, Ho and Lau, 2009).

Findings from a research conducted by Suhaimee (2005) revealed that knowledge sharing culture is already in the higher education system whereby staff in universities seems to have this positive culture in their routine work. However, the implementation is still considered as low and promotion on this culture among staff are needed. This finding is almost similar with Nordin, Daud and Meor, (2012) findings which stated that level of perceiving and implementing knowledge sharing behaviour among academic staff at Public higher education institutions in Malaysia exist but not openly or strongly practiced.

With reference to that, this research is expected to provide additional establish findings about knowledge sharing practices in higher education. The influencing factors towards the behaviour will then be identified through this research.

1.2 Background of the Research

Higher education in Malaysia is evolving by adapting to business thinking recently. Traditional university operation is focusing on teaching and learning and today's environment requires higher education to go beyond the traditional operation. Brown and Duguid (1996) and Duderstadt (2001) advocates the intense changes in competition have made higher education institution to adopt business thinking. The aim of universities these days is not only producing graduates but more to provide competent talent for the job market. It means that there is new role demanded from the members of the university in order to fulfil this new thinking.

Yusof, Ismail, Ahmad and Yusof (2012) generalised that public sectors in Malaysia are not ready to extensively embark on knowledge sharing endeavours. Initiatives are only taken on small and simple activities which are basically only a form of information management (Tan, Yusoff and Hamdan 2005). Syed Omar and Rowland (2007) assert that organizations in Malaysia (public and private) have yet to manage their information (the basis of knowledge) in order to be a knowledge-based society.

A research which examined the factors and barriers that contribute to the successful of knowledge sharing by Sohail and Daud, 2009 revealed that nature of knowledge, working culture, staff attitude, motivation to share and opportunities to share play important role in enhancing knowledge sharing among teaching staff in public universities in Malaysia. The presence of culture among the contributors shows that knowledge-sharing factors do not depend on technology alone.

The research also found that management's support and sharing opportunities for knowledge sharing are significant predictors for a positive knowledge sharing. Institutional support as a motivation technique to share knowledge appears to be less effective although technology may be important driver of knowledge sharing, other factors as providing opportunities through, better infrastructure and also training. The research discovered that staff's attitudes to knowledge sharing are explicitly linked to organisational commitment. The researcher had suggested that university administrators should play a positive role by encouraging their teaching staff to share knowledge by organizing open discussions, forums, seminars or colloquiums programs, knowledge sharing and such others in order to enhance knowledge sharing among teaching staff.

A quantitative research regarding the implementation of knowledge management (KM) in Malaysian Public Institution of Higher Education (PIHE) was carried out by Suhaimee, Abu Bakar and Alias in 2005. The study, which involved 17 public universities in Malaysia, revealed that knowledge management in Malaysian PIHE is still not widely implemented. From the study, only 47.1% has implement or starting to implement knowledge management process in their organization. Other universities are still not implementing knowledge management in their organization or not sure about it. It indicates that knowledge management implementation in Malaysia PIHE is still in the intermediate level.

The research also revealed that only one university claimed that knowledge management has been fully implemented in the organization. The others are still in the initial stage of implementing knowledge management. The findings also discovered that the existence of Knowledge Sharing Culture in Malaysian PIHEs is still very low. The statistics showed that only 29.4% of the Malaysian PIHE staff has this positive culture in their routine work. Respondents identified that motivating factors such as promotion, job assessment and incentives are required in order to support knowledge sharing.

A quantitative research was carried out by Ismail and Yusof, 2010 with the aim to investigate the relationship between individual factors such as awareness, trust and personality and the quality of knowledge sharing in Malaysian public agencies. Findings of the research proved that individual factors which are awareness, trust and personality have significant effects on knowledge sharing quality. This research helps the government of Malaysia in formulating new policies to encourage the sharing of knowledge among employees in all its agencies.

Most researches about knowledge sharing in public institution of higher education focused on academician as the target respondents. There are small numbers of researches investigate on knowledge sharing behaviour among the administration staff in public institution of higher education. It was found that comprehensive research in the area of knowledge sharing between university faculties staff has been rather limited (Sohail and Daud, 2009). Therefore, this research was designed to investigate the knowledge sharing behaviour among administration staff especially the group of managers/administrators. It is expected to provide substantial and useful findings regarding knowledge sharing behaviour in public institution of higher education in Malaysia.

1.3 Problem Statement

Besides having knowledgeable academic staff, higher education institution also require good, knowledgeable and accountable administrator to compliment the other part of the university's high quality human resources. In order to have good administrators, knowledge needs to be shared among the members to obtain collective knowledge in the organization. The collective knowledge which later becomes the organizational knowledge can be an asset to the organization as it can improve effectiveness, efficiency and also creativity (Nonaka 1994).

Knowledge sharing always closely related and part of knowledge management strategy. Both business and academic communities believe that by leveraging knowledge, an organization can sustain its long-term competitive advantages (Bhatt, 2001).

However, people are often reluctant to share information (Bollinger and Smith, 2001). Therefore, organizations usually face challenges and difficulties in knowledge sharing because of the knowledge hoarding. There is fear amongst employees that sharing knowledge reduces job security because people are uncertain about the sharing objectives and intent of their senior management (Lelic, 2001). Besides uncertain about the sharing objectives, many employees only seem to share their knowledge voluntarily, if they perceive the process to be important to their work, if they feel encouraged to share and learn, or if they wish to support a certain colleague (Wheatley, 2000).The level of trust between a company, its sub-units, and its employees seems to have a direct influence on the communication flow and thus the amount of knowledge sharing within and between business functions or subsidiaries (De Long and Fahey, 2000; McAllister, 1995).

However, there are circumstances where people willing to share their knowledge with others. Their decision to share the knowledge might be influenced by several factors. Thus, this becomes the interest of this study to understanding the motivating factors of knowledge sharing intention.

Sharing knowledge with others for the goodness of the organization is actually a voluntary act that helps contribute to an organization's competitive advantage (Casimir, Lee and Loon, 2012). Since knowledge sharing is effectively voluntary and conscious sharing is a new behaviour to learn for some people that may require training and ongoing support, clear guidelines seem to be an obvious prerequisite for effective sharing on all organisational levels (Ives et al., 2000). Knowledge sharing requires willingness to collaborate with others within an organization (Assudani, 2005).

As argued by Davenport and Prusak (1998), knowledge sharing is often unnatural because people think that their knowledge is valuable and important. Organization need to provide continuous support to improvement and diverse sharing activities**.** A combination of human networks often is the key to knowledge sharing, hence one of the first steps to knowledge sharing is to support and leverage knowledge in those networks that already exist and that already share knowledge about certain topics (McDermott, 1999; McDermott and O'Dell, 2001).

Lacking in managerial and leadership might limit knowledge sharing practices. The emphasis of managers' expectations, long-term commitment and supportive role are fundamental to creating a knowledge-centric sharing culture (McDermott and O'Dell, 2001; O'Dell and Grayson, 1998). Based on these, it is the objective of this research to understand the underlying forces of these factors.

Information technology is the driving force in the information exchange process among organizational employees. However, organization still facing difficulties in encouraging employees to use the system to share their ideas (Cabrera and Cabrera, 2002). There are still several debates about whether KM should be people-driven or technology-driven. There are opinion that knowledge sharing is mostly about people and adaptations to the social dynamics of the workplace rather than technology (Cross and Baird, 2000; Davenport, 1997; Hickins, 1999). However, Information technology systems play an important support function without which most sharing practices would be less effective and applications less timely.

There seems to be no specific empirical evidence that clearly compares and contrasts diverse knowledge-sharing barriers in large companies, SMEs, commercials, non-profit oriented, and public sector organisations. (Riege, 2005). Technology enables instant access to large amount of data. It also facilitates long distance collaboration which improve team and business functions. According to Zainab, Abrizah and Edzan (2002), the development in ICT breaks all natural, cultural, social and hierarchical barriers to knowledge sharing. There is little doubt that technology can act as a facilitator to encourage and support knowledge sharing processes by making knowledge sharing easier and more effective (Reige, 2005). Hence, it becomes the aim of this research to examine the technological factors that affect knowledge sharing intention.

Zhang et., al (2006) (as cited by Ismail and Yusof, 2010) stated that it is a recent phenomenon that knowledge sharing gains its popularity and importance in public sector. It is argued that knowledge sharing among employees significantly impacts the performance of both public and private sector organizations (Silvi and Cuganesan, 2006). Various factors might influence KSI among public sector organization members. Therefore, this research is with the aim to explore individual factors, organizational factors and technological factors that can influence knowledge sharing intention based on Theory of Reasoned Action (TRA) as the theoretical basis.

As an institution that well-known with knowledge provider, universities as knowledge sharing is also important in public sector, universities as the higher education institution should also focus and initiate strategies in promoting knowledge sharing among the staff regardless whether the academician or the administration staff.

In a very competitive education industry, having knowledgeable set of administrators can be a competitive advantage to a university as it can improve effectiveness, efficiency and also creativity (Nonaka 1994). Knowledge sharing in universities should cater the academician, the administrators and also the students as these groups are the main components of a university (Suhaimee, 2005).

Many scholars investigated on various aspects of knowledge sharing in higher education institutions, but according to Sohail and Daud (2009), comprehensive research in the area of knowledge sharing between university faculty staff has been rather limited. Most of the researches are focusing on the teaching staff or academician in determining knowledge sharing in universities (Ramayah, 2013; Goh and Sandhu, 2013; Nordin et al., 2010; Cheng et al, 2009). There was less research investigating knowledge sharing among university administrator. Therefore, this research is conducted with the purpose to provide additional empirical findings on knowledge sharing in higher education institutions in the perspective of administrator. The findings are expected to explore the knowledge sharing behaviour among non-academic universities staff as these groups are working in the same environment with academician but different job nature that might have influences in their knowledge sharing behaviour.

Previous researches on knowledge sharing in the context of higher education institutions have a dominant tendency to focus attention on knowledge sharing intention and behaviour among lecturers. There is limited number of research on knowledge sharing among university administrator even though administrator is one of the university main components and they play important roles in managing the university.

Jurisdiction and the role of university administrators are very important and critical. A university will not be able to achieve their objectives without strategic collaboration with the efficient and competent administrator. University administrators are hold responsible for all university administrative matters such as student administration, personnel management and financial operations of the organization. They are also involved in the preparation and purification of the academic curriculum, as well as the preparation, execution and monitoring of university policies.

UiTM had developed initiatives to develop the administrators which focus on rejuvenating the university administrators. One of the initiatives is by setting a strategic innovation targets for the university administrators especially the Assistant Registrars by highlighting the main focus which is; administrators are the talent mangers who responsible to manage the knowledgeable organization members as to produce highly knowledgeable talent for the nation. Besides that, administrators also are the group of individuals who facilitate all the managerial aspects efficiently and effectively (UiTM, 2009). It shows that it is crucial for the administrators in UiTM to develop valuable core competence as it can ensure both the long team survival and competitive success of that organisation (McNeal, 2003). People could provide a core competence, which will then translate into valuable intellectual capital for the organisation (Nonaka and Takeuchi, 1995).

In the 10th Malaysia Plan, UiTM is focusing on developing the human capital by aiming on strengthening the delivery system through high quality workforce. High quality workforce is defined as Assistant Registrars who possess 3R known as Respected, Referred and Relevant. This aim can be achieved through teamwork and collegiality. Another important element in strengthening the delivery system is by having high quality information structure which targeting on collecting, distributing and disseminating university information efficiently and accurately. This initiative demanded Assistant Registrars in UiTM to practice knowledge sharing in performing their task. Their sharing is crucial in determining the achievement of the objectives.

In this research, Assistant Registrars in UiTM is considered as a manager and supervisor, because he or she is responsible to manage the knowledgeable organization members and also directly accountable for obtaining results through people in his or her department or unit. The role of the managers to facilitate knowledge sharing is important and as a supervisor, they need to play role as facilitator encouraging knowledge-sharing in team is important for developing the collective learning capability of organisations. Supervisors as facilitators of knowledge-sharing could provide the important missing communication link, to activate the process of individual tacit knowledge becoming shared, collective tacit knowledge, and ultimately learning. Thus, learning gained through the team knowledge-sharing process could provide core competence for the organisation (McNeal, 2003).

That is the main reason why this research is focusing on administrator and not academicians as other researcher did. With reference to Wooldridge and Floyd, 1990 cited by McNeal (2003), line managers can "mediate, negotiate, and interpret connections between the organisation's institutional (strategic) and technical (operational) levels" as they are close to the daily operations and customers. This gives line managers unique knowledge concerning organisational realities, which can inform their understanding of the important issues for implementing strategic choices through people. It implies the current practice and job functions of Assistant Registrars in university.

Exploring the new perspective on one of the university components will help to verify findings from previous research regarding knowledge sharing behaviour and also factors influencing knowledge sharing in higher education institutions.

1.4 Research Questions

The research questions (RQ) in this research are as follows:

RQ 1: What is the level of knowledge sharing practices among university administrator at UiTM Shah Alam?

RQ 2: What is the relationship between individual factors and knowledge sharing intention among university administrator at UiTM Shah Alam?

RQ 3: What is the relationship between organizational factors and knowledge sharing intention among university administrator at UiTM Shah Alam?

RQ 4: What is the relationship between technological factors and knowledge sharing intention among university administrator at UiTM Shah Alam?

RQ 5: Which factor influence most to knowledge sharing intention: the individual factor, the organizational factor or technological factor?

1.5 Research Objectives

This study is to empirically verify which factor between individual factors, organizational factors and technological factors influence most to knowledge sharing intention. The research objectives (RO) of the research are as follows:

RO 1: To determine the level of knowledge sharing practices among university administrator at UiTM Shah Alam.

RO 2: To determine the relationship between individual factors and knowledge sharing intention among university administrator at UiTM Shah Alam.

RO 3: To determine the relationship between organizational factors and knowledge sharing intention among university administrator at UiTM Shah Alam.

RO 4:To determine is the relationship between technological factors and knowledge sharing intention among university administrator at UiTM Shah Alam.

RO 5: To identify the most influencing factor of knowledge sharing intention: the individual factor, the organizational factor or technological factor.

1.6 Scope of Research

This research is conducted among the administration staff of a public university in Malaysia. Universiti Teknologi Mara (UiTM) is selected as the mode of study which aims at investigating individual factors, organizational factors and technological factors influencing knowledge sharing intention among officers.

The population of this study is the group of Assistant Registrar Scheme comprises of grade N41, N44, N48, N52 and N54. This constitutes Chief Deputy Registrar, Senior Deputy Registrar, Deputy Registrar, Senior Assistant Registrar and also Assistant Registrar whom currently working in UiTM main campus in Shah Alam. They were chosen because of the role they play in planning, coordinating, managing and steering the affairs of their respective departments.

They are mostly leaders in their department who require sharing their knowledge and experiences either with the subordinates or with other people that they cooperate with. Assistant Registrar is the biggest managing group in UiTM system, which performs most all the managing affairs in UiTM.

This study is carried out with the objective to identify factors that influence most to knowledge sharing intention among officers in UiTM. Therefore, the findings of this study are to provide a valuable insight of knowledge sharing intention among officers in public university. The study was conducted among the Assistant Registrar for several reasons:

i. Assistant Registrar is the biggest group of officers in a university. They represent 25% from the total numbers of officers in UiTM. It is a position that specifically governs the university, particularly in terms of academic management, student management, human resource management and human resource development.

ii. Assistant Registrar usually is the head of a division or unit either at the main campus or at branch campuses. This means that they will have to get involve in knowledge sharing among colleagues and subordinates.

This research mainly focus in identifying the influence of individual factors (reciprocity, extrinsic rewards, self-efficacy, and trust), organizational factors (fairness, affiliation and task interdependence) and technological factor (controllability of ICT) towards knowledge sharing practices among university administrator.

1.7 Significance of the Research

i. Managerial Benefits

This study will provide empirical data which can be used by the Human Resource Department of UiTM in designing knowledge sharing activities to improve the performance and competitiveness of the officers.

ii. Theoretical Contribution

This study will be able to determine and clarify the factors that influence knowledge sharing from the perspective of university officers. It also clarifies the factors from the previous research.

1.8 Limitation of Research

i. As this study is based on survey and questionnaire is the instrument to collect data and it was sent through Google Docs which is web-based questionnaire, honesty of the respondents might be questionable. There are tendency for the respondents to be biased and untruthful towards the questionnaire.

ii. This study was conducted at UiTM only, the findings might not generalise the situation in other universities as well.

1.9 Conceptual Definitions

This section is discussing the concepts that construct this research from previous research and literature with the purpose of providing guide to develop the operational definition for this study.

The conceptual definition will discuss about knowledge sharing together with all dimensions from each factor which are individual factors (reciprocity, extrinsic rewards, self-efficacy, and trust),) and also organizational factors (fairness, affiliation and task interdependence) together with technological factor (controllability of ICT).

1.9.1 Knowledge Sharing

Knowledge sharing refers to an employee's voluntarily giving information on data or processes that relate to the organization's field of work, whether by communicating with co-workers directly or by contributing information in an organization's database (Azarbayjani, 2007). Knowledge sharing is an activity which is based on the voluntary and willingness of an individual to share his or her knowledge **(**Goh and Sandhu, 2013). Lee and Al-Hawamdeh, 2002 (as cited by Ismail and Yusof, 2002) defined knowledge sharing is the deliberate act in which knowledge is made reusable through its transfer from one party to another.

1.9.2 The Individual Factors

The individual factors examined in this study are reciprocity, extrinsic rewards, self-efficacy, and trust. Thus, the conceptual definition of each dimension will be discussed in the following section.

1.9.2.1 Reciprocity

Reciprocity is about relationship in which people are having mutual agreement into entering exchange behaviour. Reciprocal relationship is defined as employees seeking to establish an ongoing relationship with others in the organization (Bock et al., 2005). Reciprocity is about to give in turn the same degree of what was extended by another (Azarbayjani, 2007). Through reciprocity, individuals who share their knowledge would assume the receiver would reciprocate similar assistance, cooperation and support from others in the future if it is required (Kankanhalli, Tan, & Wei, 2005).

1.9.2.2 Extrinsic Rewards

Burchinal (2006) relate extrinsic rewards with the working conditions, for instances, reasonable working hours, the salaries, incentives and bonus received, and the facilities provided in work place (personal room). Monetary rewards, acknowledgment, and promotion are the general extrinsic rewards adopted by organization (Lee and Ahn, 2007). Extrinsic motivation is a construct that pertains whenever an activity is done in order to attain some separable outcome. It can vary greatly in the degree to which it is autonomous (Ryan and Deci, 2000). Maurer and Tarulli, 1994 (as cited by Cabrera, Collins and Salgado, 2006) had perceived extrinsic rewards as better pay, promotion or other tangible rewards.

1.9.2.3 Self-efficacy

Cheung and Lee (2007) describe knowledge self-efficacy as the degree of people believing that their knowledge can help other members in the virtual community. Knowledge sharing self-efficacy is one's confidence in an ability to provide knowledge that is valuable to others (Chen and Hung, 2010). It involve the belief of own self capabilities to share valuable knowledge with others.

1.9.2.4 Trust

Trust is viewed as a set of specific beliefs primarily pertaining to the integrity, benevolence, and ability of another party (Chiu et al., 2006). In knowledge sharing, interpersonal trust is defined as "the extent to which a person is confident in and willing to act on the basis of the words, actions and decision of another (McAllister, 1995). When people interact to transfer knowledge, the social exchange occurs and trust is the key and prerequisite to knowledge transfer (Davenport & Prusak, 1998). It means that when trust exists between two parties, they are more willing to engage in exchange relationship.

This behaviour may lead to the sharing of good quality knowledge. Mishra, 1996 (as cited by Kankanhalli et al,. 2005) stated that trust indicates a willingness of people to be vulnerable to others due to beliefs in their good intent and concern, competence and capability, and reliability.

1.9.3 The Organizational Factors

The organizational factors examined in this study fairness, affiliation and also task interdependence. The conceptual definition of each dimension will be discussed in the following section.

1.9.3.1 Fairness

Perceived fairness points to the means by which members decide if they are treated fairly within the community, and to the ways in which these decisions affect other related factors. Perceived fairness was shown to play a strong role in members' disposition to share their knowledge (Yu, Lu and Liu, 2010). Fairness which means a trusting climate is one of the organization climate factors for knowledge sharing (Bock et al, 2005).

1.9.3.2 Affiliation

According to Maslow's Model of motivation, love and belonging are one of the human needs which can motivate action. The need for love, friendship, and intimacy become important. Affiliation is the perception that togetherness exists among the employees of the organization as a result of caring and pro-social behaviour that motivate employees to help each other (Bock et al., 2005). It is also describes as the sense that measures the feeling of togetherness or closeness with other members. These feelings are developed based on the care and warmth received by him or her during needy times (Goh and Sandhu, 2013).

1.9.3.3 Task Interdependence

Interdependence between team members commonly considered as factor that may shape individual responses and attitudes. Interdependence among members may derive the process by which members execute their work. Perceived task interdependence refers to the extent to which a subgroup believes that it depends on the other subgroup in order to carry out its work (van der Vegt, Emans and van de Vliert, 1998). It is about connection between tasks and subunits upon completion of the whole work. Task interdependencies create a situation of reciprocity whereby knowledge sharing is seen as a form of social exchange (Bock et al., 2005). Task interdependence also creates a situation where subgroups' problems and solutions are intertwined to determine task completion (Pee, Kankanhalli and Kim, 2010)

1.9.4 Technological Factor

1.9.4.1 Controllability of ICT

In the aspect of knowledge sharing, ICT may be introduced with the purpose of improving the processes involved in knowledge sharing and also helps locate the various elements relevant to the process of knowledge sharing. The role of ICT for knowledge sharing can only be fully understood if it is related to the motivation for knowledge sharing, and not just to maintenance factors such as removing barriers, etc (Hendriks, 1999).Utilizing information technology implies attention not only to improving the individual and group level processes of knowledge creation and storage, but also to improving the linkages among individuals and between groups (Alavi and Leidner, 2001).

Controllability according to the Weiner's attribution theory on achievement is one of the three causal dimensions. Controllability refers to the factors that we can control to influence results such as skill and competence (Weiner, 1979).

1.10 Operational Definitions

This section is defining the concepts that construct this research in the operational definition that significant and relevant with this study. The operational definition will discuss about all dimensions from each factor which are individual factors (reciprocity, extrinsic rewards, self-efficacy, and trust),) and also organizational factors (fairness, affiliation and task interdependence) together with technological factor (controllability of ICT) in related with the scope of study. The operational definitions are presented in the table below for better understanding.

Construct	Operational Definitions	References
KS	The degree of one's belief to willing and voluntarily share his or her knowledge**.**	Adapted from Goh and Sandhu (2013), Azarbayjani (2007).
RECIPROCITY	The one's willingness to give in turn the similar assistance, cooperation and support from others in KS	Adapted from Kankanhalli et al (2005).
EXTRINSIC REWARDS	The one's belief that incentives will be given when one involve in KS.	Adapted from Ryan dan Deci (2000).

Construct	Operational Definitions	References
SELF-EFFICACY	The degree of one's belief on ability to provide valuable knowledge that is to members and organization.	Adapted from Chen and Hung (2010).
TRUST	The degree of one's belief to be vulnerable to others due to beliefs in their good intent and concern.	Adapted from Kankanhalli et al,. (2005)
FAIRNESS	The one's perception and belief that organization climate is fair and one will be treated fairly	Adapted from Yu, Lu and Liu (2010)
AFFILIATION	The degree of one's belief on the feeling of togetherness or closeness with other members	Adapted from Goh and Sandhu (2013)
TASK INTERDEPENDENCE	The perception that individual have to interact and depends on other members to complete their work	Adapted from van der Vegt, Emans and van de Vliert (1998).
CONTROLLABILITY OF ICT	Individual perceive that they have control over the ICT facilities as an interaction medium for KS	Adapted from Weiner (1979).

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