KNOWLEDGE-SHARING BEHAVIOUR IN SOFTWARE DEVELOPMENT ORGANIZATIONS

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ABSTRACT

The aims of this cross-sectional quantitative analysis include examining the influence of attitude, subjective norms and perceived behavioural control on knowledge-sharing behaviour among information technology professional at software development organizations, besides identifying the most influential variables as well as the moderating effects of distributive justice.

Self-administered questionnaires, which developed based on previous studies, were distributed to sample respondents from nine public listed software development organization and successfully yield 168 valid responses. Analysis shows a moderate tendency of knowledge-sharing behaviour among respondents. Further, Pearson Correlation analysis validated significant and positive relationships between the three independent variables and knowledge-sharing. By comparison, subjective norms were the most influential factors on the said behaviour while perceived behavioural control accounted the least variance on knowledge-sharing behaviour among respondents. Overall, introduction of distributive justice had moderated these relationships. Such results revealed detrimental implications on the organization and information technology professionals, which direct to justifications on the emergence of such phenomenon besides some suggestions for improvement. Finally, some suggestions for future researches are identified and proposed, serves as the conclusion of this study.

Keywords: knowledge-sharing behaviour, attitude, subjective norms, perceived behavioural control, distributive justice

APPROVAL PAGE

I certify that I have supervised /read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in quality and scope, as a thesis for the fulfilment of the requirements for the degree of Doctorate of Business Administration (DBA)

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Declaration

I hereby declare that the thesis is submitted in fulfilment of the Doctor of Business Administration degree is my own work and that all contributions from any other persons or sources are properly and duly cited. I further declare that the material has not been submitted either in whole or in part, for a degree at this or any other university. In making this declaration, I understand and acknowledge any breaches in this declaration constitute academic misconduct, which may result in my expulsion from the programme and/or exclusion from the award of the degree.

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INTRODUCTION

1.1 Background of the study

Knowledge is important for the renewal of any organization, which has to filter relevant information to meet the challenges of changing external environment brought about by changing circumstances and new technologies. In this regard, knowledge-sharing behaviour among management and employees of the organization is necessary to renew and motivate all involved in organizational performance achievements. The relationship between knowledge-sharing behaviour (knowledge-sharing behaviour quantity and knowledge-sharing behaviour quality) and attitude, subjective norm and perceived behavioural control has a direct or indirect effect on distributive justice in knowledge-sharing behaviour. This is because distributive justice is one of the dimensions in organizational justice that creates a fairness environment in an organization which eventually influence knowledge-sharing behaviour among employees.

Management guru, Peter F. Drucker (1988), in his publication "The Coming of the New Organization" in year 1988, had predicted twenty years ago that organizations will have lesser layers of management and turn into knowledge-based organizations, comprising largely of specialists who direct and discipline their own performance through feedback from customers, colleagues and headquarters. This has proven to be true when the contemporary global environment seems to be driven by a knowledge-intensive economy. The world, due to technological, communications and

transportation advancement and the elimination of national trade barriers, and so on, has become a global village, confronted with uncertainty and fast-changing environment. Thus, only those organizations which are able to constantly and consistently create new knowledge and disseminate it throughout the entire organization to quickly embody into its products and technologies will survive and sustain competitive advantage over its competitors (Nonaka, 1998). This perspective is consistent with the perspective of Alavi and Leidner (2001). Knowledge itself does not help an organization to win competitive advantage over others unless the organization is capable of leveraging on existing knowledge to generate new knowledge out of it and proactively act upon it (Alavi and Leidner, 2001).

Given the need for, and benefits of, leveraging knowledge, organizations around the world, regardless government sector or private sector, profit or non-profit, begin to concentrate on managing their knowledge bases, including Malaysia. In the effort of realizing the envisaged developed nation status in year 2020, the Malaysian government is constantly emphasizing the need to transform the nation's economy towards a knowledge-based economy (k-economy). The 10 Big Ideas in Tenth Malaysia Plan (2011-2015) had clearly outlined unleashing innovative capabilities in facilitating the nation's quest.

Since 1990s, public and private institutions are gradually adopting various knowledge management systems hoping to improve the nation's competitiveness globally. However, numerous studies revealed that knowledge management in Malaysia still lagging behind others advanced economy, including Singapore (Mohammed, 2007). Despite much knowledge management initiative had taken in a

concerto by both government and private institutions, but the knowledge management in the country is merely at intermediate level (Moshari, 2013; Suhaimee, Ahmad, and Rose, 2005).

In a separate note, the latest 2014 Asian Most Admired Knowledge Enterprises (MAKE), Malaysia failed to chart its name in the hall of fame (2014 Asian Most Admired Knowledge Enterprises Report, 2015). Moreover, the second phase of Knowledge Content Survey reported a drop in the level of knowledge processes (knowledge generation, acquisition, sharing and utilization) (Jayasingam, 2013). In view of the nation is only left with 5 years for it to achieve 2020 vision, thus, the urgency of speeding knowledge management in the country cannot overstate.

Frost (2014) defined knowledge management as making the right knowledge and knowledge sources available to the right person at the right time, hence, knowledge-sharing behaviour is seen as the essential aspect in the process. Numerous studies have found that barriers to knowledge management are non-technological-based, instead, it is human-related (Shaari, Aisyah, and Rajab, 2014). The same applies to knowledge-sharing behaviour, a vital knowledge management process because knowledge resides in the mind of an individual. Riege (2005) identified three-dozen barriers of knowledge-sharing behaviour and categorized it into individual, organizational and technological predictor.

A study conducted on private organizations from various industries across Malaysia found that knowledge-sharing behaviour is positively related to knowledge creation while information communication and technologies merely an enabler instead

of driving predictor (Wai_Yi and Jayasingam, 2012). This study provides an explanation on the reason of the country lagging behind other leading economies despite at par with those countries in technological aspect.

Further literature reviews on Malaysia banks, public education institutions and a few government agencies arrived at a similar conclusion. Leaders and employees have a similar perspective that knowledge-sharing culture is low in the organization, even though they are aware of the importance of knowledge-sharing behaviour (Moshari, 2013). In a specific study relating multidimensionality of Total Quality Management with knowledge-sharing behaviour in Malaysia context, knowledge-sharing behaviour is reported to have positive association with those dimensions, i.e. organizational culture, customer focus, leadership, training and development, and teamwork (Ooi, Cheah, Teh, and Lin, 2010).

Obviously, organizations should focus on people approach, develop effective strategies in capitalizing its peoples' knowledge and create new knowledge out of it, with the assistance of advanced information and communication technologies. Unwillingness to share knowledge for whatsoever reasons, such as fear of losing competitiveness, organization culture, leadership and so on, will definitely impede an organization's effort in acquisition, organization and dissemination of knowledge throughout the organization despite the availability of the most sophisticated technology. Consequently, organizational effectiveness will be sacrificed and its competitive advantage lost. Hence, organizations must be aware of predictors or conditions that enable and foster knowledge-sharing behaviour among its people. Such

understanding can provide the concrete cornerstone for an effective knowledge management system.

Given the association of knowledge-sharing behaviour and successfulness of knowledge management initiatives, there is a need to study predictors leading to employees' willingness to share knowledge in Malaysia information communication technology industry. The Malaysian government recognizes the importance of this industry as a catalyst in leapfrogging overall economic growth. The contribution of this industry to the country's Gross Domestic Product (GDP) is gradually increasing from year 2000, 3.3%, and doubled in 2014 to 6.4% (PIKOM, 2014).

Despite this industry is increasingly gaining places in the country's economy, but it failed to attract sufficient talent, which eventually will negatively affect the nation's aspiration of 33% skilled workers by the year of 2015 and 50% in 2020 (PIKOM, PIKOM ICT Job Market Outlook 2014: ICT Job Market continues on Positive Growth, 2014). The unattractive compensation package is among the main factor leading to brain-drain phenomena. Despite 7.2% increment in the average salary of information technology-related workers in 2013 and forecasting 8.7% in 2014, the industry players in the country are still unable to compete with other information technology firms globally as well as regionally. Kuala Lumpur, the city with the highest pay for information technology related jobs in the country, is ranked at 53rd out of 70 countries in terms of remuneration scale. Vietnam and Hong Kong topped the ranking in terms of Asia countries (PIKOM, 2014); while 61% of employers in the United States, which topped the world ranking, also facing challenges in securing talent as in Malaysia (Robert Half Technology 2015 Salary Guide, 2015)

Beside above issue which leading to brain-drain phenomena, decline in supply as well as employability of local information technology graduates is continuing to haunt the industry in securing the right talent. A high number of information technology graduates were churned out by universities between early 1990s and 2001, however, the industry witnessed a drastic supply decline in 2002. A statistic from the Ministry of Education showed there were over 119,000 enrolments in information technology courses with only 53,000 graduates in 2002. However, the figure dropped to 80,000 and 19,500 respectively in 2012. In addition to such drastic fall, only 10% of graduates have the quality and competency meet the demand of employers (PIKOM, 2014).

Elaboration above reveal the critical talent issue that needs to be solved urgently but the causes of the problem required long time and collaboration from many parties. On the other hand, the advancement of this industry is happening at lightning speed does not give them the luxury of time to solve the problems. Moreover, replacing them with new employees is not an effective and efficient because this method is very time consuming and incurred high cost, as high as 150% of annual salary for a voluntary resignation, besides the impossibility to fully recover knowledge lost. In such circumstances, the wise move should be taken by smart organizations is a build-up own knowledge repository by retaining knowledge of current employees before their departure. This can be done by encouraging knowledge-sharing behaviour among employees. In addition, knowledge-sharing behaviour may stimulate creativity and innovation ability which eventually improve organizational performance.

1.2 Statement of the Problem

Literature review shows that knowledge management level among Malaysia information technology organizations are at intermediate level, even though these organizations are highly regarded as knowledge-intensive organization. Yap, Rosmaini, Muhamad Saufi Che and Norazlin (2010) argued that the predictor of knowledge management is human-related problem and since knowledge-sharing behaviour is largely depends on individual willingness, thus investigation into the predictors influencing employees to share knowledge is necessary. Further, Chong and Lin (2008) pointed out that information technology employees are aware with the importance of knowledge-sharing behaviour but failed to prove it in knowledge management implementation. Unfortunately, there are limited literature on what constitute the predictors leading to knowledge-sharing behaviour among information technology professionals. Nevertheless, several studies conducted in Malaysia in this area of study, but available literature show that the public sector and higher education institutions are popular study-settings. Also, the literature shows that the majority had assumed the dependent variable (knowledge-sharing behaviour) having a linear relationship with the independent variable. Thus, this study attempt to include distributive justice as a moderating variable in assessing its effects on the linear relationship between dependent variable and independent variable.

In summary, distributive justice as a concept applies to studying the effect of knowledge-sharing behaviour is relatively a new area of research, especially in information technology organizations. Although information technology professionals are aware of the importance of knowledge-sharing behaviour, yet they fail to practice

it in their organizational life. Given the fast paced development and ephemeral changes in emerging and new technologies today, knowledge-sharing behaviour in information communication technology is indeed imperative to further innovation and new discoveries in information technology solution applications. Invariably, therefore it is necessary to understand and promote the significance of distributive justice in promoting its impact on knowledge-sharing behaviour in software development organizations, which this study offered to explore.

1.3 Scope of the Study

The study area falls into knowledge management discipline, which is a broad discipline. However, this study will only focus on knowledge-sharing behaviour of employees in the information technology industry only. Even though there are plenty of predictors influencing knowledge-sharing behaviour, however, this study will only focus on:

i. Attitude, subjective norm and perceived behavioural control as independent variables;
ii. Moderating effects of distributive justice, and
iii. The effects of demographic predictors, i.e. gender, age, working experience and education, on knowledge-sharing behaviour.

Further, as the concept of "knowledge" is very broad, this study narrows its' focus on the knowledge that is legitimate and constructive for an individual to carry out work functions effectively, and for the goodness for both employee and organization. This means that "knowledge" that are detrimental to either organization

or any one employee is not included within the scope of study. Examples include rumours, gossips, tricks in gaining certain benefits such as promotion and so forth. "Whistle blowing" and information that legally bound to report like criminal activities also not within the scope of study.

Knowledge-sharing behaviour in this study is strictly on a voluntarily basis and beneficial to the sender, receiver and any other party involve. As such, the decision whether to share or not to share the knowledge does not involve the issue of ethics or serving the interests of certain parties. For instance, sharing of knowledge about the current organization's business strategy with prospect employers, who is the competitor to the current employer. This is extremely unethical behaviour, further interest on someone at the costs of another. Thus, this type of knowledge-sharing behaviour is excluded from this study, even though it is on a voluntary basis.

1.4 Objectives of the Study

The objectives of this study are as follows:

a) To provide a comprehensive framework and understanding of the environment relating to patterns of knowledge-sharing behaviour among information technology professionals in Malaysia.

b) To determine the relationship between planned behaviour (attitude, subjective norms and perceived behavioural control) and knowledge-sharing behaviour.

c) To examine the moderating effect of distributive justice on knowledge - sharing behaviour in the target organizations.

d) To determine which dimension (attitude, subjective norms and perceived behavioural control) most influence knowledge-sharing behaviour.

1.5 Research Questions

The primary research question focuses on the relationship between the attitude, subjective norms, perceived behavioural control, distributive justice and knowledge-sharing behaviour (knowledge-sharing behaviour quantity and knowledge-sharing behaviour quality) among professionals in the information technology industry.

Specifically, this study will attempt to seek answers to the following questions:

a) What is the relationship between planned behaviour (attitude, subjective norms and perceived behavioural control) and knowledge-sharing behaviour?

b) What are the effects of distributive justice on the relationship between planned behaviour and knowledge-sharing behaviour?

c) Which is the most influential predictor (attitude, subjective norms or perceived behavioural control) towards knowledge-sharing behaviour?

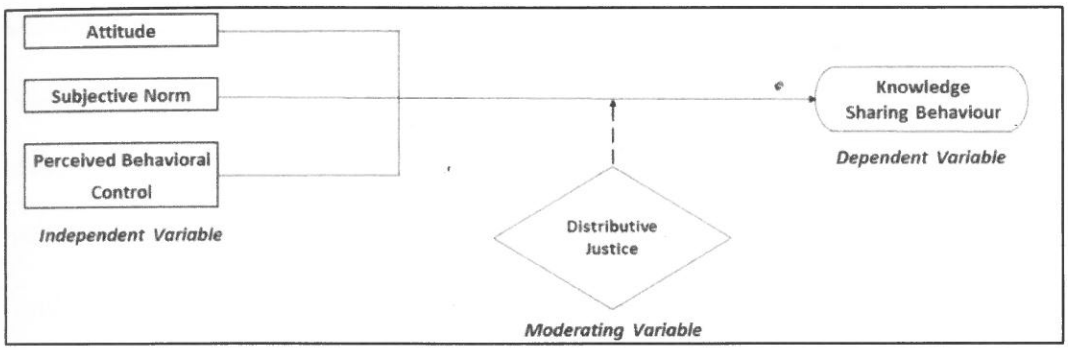
1.6 Research Methodology

This study was grounded in two well-established theories. The first theory is adopted from the Theory of Planned Behaviour by Fishbein and Ajzen (1975). This theory is a widely used social-psychological model in the study of explaining and predicting human behaviour. The theoretical construct of this study also build on the distributive justice in organizational justice founded by Greenberg (1990). It is

concerning perception of an individual or an employee on the fair treatment received from the employer. An individual will assess decisions as well as the actions of the management because it will affect economic and social, even emotional wellbeing of that individual (Cropanzano and Schminke, 2001). Chapter 2 will elaborate on how the selected theories fit into the theme of this study.

Figure 1.1

Theoretical Framework of the Study



Source: Adopted and developed for this research study.

1.7 Significance of the Study

Hall (2011) mentioned that predictors of influencing knowledge-sharing behaviour should be given special attention and priority in knowledge research. Thus, the findings of this study are expected to benefit researchers and practitioners in knowledge management discipline.

Firstly, this study examines the determinants of knowledge-sharing behaviour among information technology professionals in Malaysia. It sought to contribute to the existing body of knowledge in knowledge management and the said industry's strategic human resources management, on what motivate its' employees willingly and

actively sharing their knowledge. Therefore, the significance of this study is to add new and more comprehensive perspectives, illuminate on the possible areas for improvement while avoiding wastage of resources in human capital development.

Most of the prior researches and writings were concentrating on how to capture knowledge and learning designs in the public sector and higher education institutions, seldom on information technology organizations. However, this industry is knowledge-intensive organizations and experiencing advancement at lightning speed besides its' essential role in leapfrogging the country's world status. Thus, information technology professionals are a group of people whose continuous development relies heavily on interaction with others and synthesizing of knowledge, which eventually results in desirable professional and personal development. Answers to research questions above are expected to provide insights into the investigation of predictors associated with knowledge-sharing behaviour among information technology professionals as well as the correlation relationship between each independent variable (intention, attitude, subjective norms and perceived behavioural control) and dependent variable (knowledge-sharing behaviour). Consequently, the findings are expected to contribute in closing the gap of why some information technology professionals are actively sharing their knowledge while some are not.

Following "brain-drain" phenomenon challenged organizations and the role of knowledge as secret recipe to competitive advantage, organizations must learn to create a knowledge-sharing behaviour conducive environment. However, this will not be an easy task because organizations are facing many issues caused by globalization at the same time. Hence, this study also examines moderating effects of fairness

environment on such behaviour focusing on distributive justice. Such understanding is crucial because sharing of knowledge is a "two-way street". Organizations must learn the predictors for information technology professionals to share or hoard knowledge in order to build up a knowledge repository before their departure and groom up remaining employees to replace them. These efforts are worthy because it will help in applying the right management techniques that address the needs and concerns of employees, consequently in maintaining, or even enhancing, the organization's performance effectiveness.

1.8 Limitations of the Study

There are several limitations in this study. Firstly, this study only focuses on three independent variables and distributive justice as the only one moderating variable while there are many other variables, such as rewards, leadership, organizational culture and others, which may also have significant influence on the propensity of sharing knowledge.

Furthermore, the survey was limited to publicly-listed software development organization, the research findings may be the influence of its organization size and structure. Thus, findings may not generalize to other non-publicly listed organizations as well as other information technology organizations.

Moreover, this study focuses on information technology professionals who are involved in software development activities. However, they are not the only

group of employee in any of the organization. In reality, there are some other information technology professionals who may work in the same organization, but not involved in software development activities as well as non-information technology workers like administrative staff.

Another limitation is concerning the responses from the contacted organizations. Information gathered from Kuala Lumpur Stock Exchange shows that there is a total of nine public listed software development organizations in Malaysia. Unfortunately, two organizations failed to response. Therefore, the sample was from the population of the remaining seven organizations. Due to the agreement to keep the organizations surveyed anonymous, the name of the organizations is not mentioned here as requested by them to preserve confidentiality, but the actual name of the organizations is kept for verification process.

The final limitation concerns the possibilities of biases for participation in the survey was strictly on a voluntary basis. It may due to subject's interest and concern in the research topic. Moreover, the data used for analysis are relying on self-report data instead of direct observation. It is acknowledged that self-report data as the single source of data subjected to various biases like response bias. However, self-report data was chosen instead of direct observation after proper considerations given to the constraint of time and budget.

1.9 Definition of Terms

Presented below are the definitions of terminologies which will be used throughout this study. Understanding of these terms is needed in order to avoid potential misunderstanding.

Knowledge. Any type of information received and interpreted through experience, education and acquaintance.

Knowledge management (KM). The process of an organization capture, store, articulate and leverage knowledge through it's' people, for the sack of continuing survival and effective performance.

Knowledge-sharing behaviour (KSB). A two-way communication, where an individual with certain knowledge, giving it to other people who perceived that knowledge is valuable to him, whilst the former also receiving knowledge from the later that he perceived value to him too. Both parties will then interpret and create new knowledge from the knowledge received.

Knowledge-sharing quantity (K-Quan). Volume of knowledge share with others.

Knowledge-sharing quality (K-Qual). The degree of knowledge relevancy, completeness, easiness to understand, timeliness, reliability and accuracy.