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## The Influence of Organizational Factors on Knowledge Sharing Using ICT among Teachers

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### Abstract

In this research, the knowledge-sharing behaviour using ICT among teachers were explored. There are many factors affecting behavioural intention to use ICT in knowledge sharing either from individual, organizational or technological perspectives. In studying knowledge sharing, many previous researchers combined the psychological and knowledge sharing theories to develop theoretical models. Thus, based on several theories, this paper seeks to examine the organizational factors that contribute to successful knowledge sharing using ICT among teachers. The results can provide information to the Government in providing the infrastructure, activities or programmes as well as the system of rewards and recognition that can increase the use of ICT in knowledge sharing and to enhance the profession of teaching. A mix method was employed to achieve the objectives. A survey was conducted in 20 selected schools in Perak from November 2011 to January 2012. The questionnaires, as the instrument for data collection, were distributed to 400 respondents. The data was analyzed using Structural equation modelling using AMOS version 19.0. The results from correlation analysis indicated positive and significant correlation between organizational factors and behavioural intention to use ICT in knowledge sharing. Besides, nine participants were interviewed to enhance the analysis.

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## 1. Introduction

In the knowledge based era, knowledge sharing has gained many attentions amongst researchers and business managers in recent years. Knowledge sharing is believed as the core and the toughest task for knowledge management. Knowledge sharing is often associated with ICT. Knowledge sharing has gained many attentions from the researchers and this topic has always been discussed as it is the most valuable asset in an organization. The existence of ICT has offered an individual or organizational the fastest, cheapest and broadest mechanism to share knowledge. In the education context, there are still inadequate studies on knowledge sharing using ICT. Knowledge sharing using ICT among teachers is still at a moderate level [1-2]. In order to instil the culture of knowledge sharing using ICT in school, factors affecting the behaviour of teachers to use ICT as a tool for knowledge sharing should be explored.

## 2. Literature review and hypotheses

This literature review examines recent research studies on the factors that influence the behaviour of the intention to use ICT in knowledge sharing. Knowledge sharing among teachers is essential to encourage the proliferation of new knowledge thus adding value to the existing knowledge. Knowledge sharing enables teachers to generate ideas and share knowledge about teaching methods and teaching and learning activities, providing the exam paper and so on [3]. Besides, knowledge sharing between teachers and students will increase the students' confidence and self-esteem. In addition, knowledge sharing between teachers and parents or societies will maintain good relationships to form and educate the next generation. Overall, the good practice of knowledge sharing will enhance productivity, innovation and overall organizational competitiveness[4-5].

In this study, knowledge sharing using ICT among teachers is defined as an effort to inform and educate fellow friends to use ICT such as email, blog, video-conferencing, social network like "Facebook" or "Twitter", YouTube, internet based interactivity and web tools like wikis, story board and internet application to make voice call such as Skype, Yahoo Messenger or Gmail Chat. The knowledge sharing literature has identified a wide range of factors that influence knowledge sharing behaviour. These factors could be summarized into the following three groups; technological factors, organizational factors and individual factors [4], [6-7]. However, this study is designed to seek the factors that influence the behaviour of the intention to share knowledge using ICT from the organizational perspective.

### 2.1. Organizational Factors and Knowledge Sharing

Organization is defined as a group of people united in a relationship and having some interest, activity, or purpose in common [8]. Organizational factors are one of the important factors that have been observed among previous researchers [7-13] that has significant influence on knowledge sharing. In this study, through the lens of knowledge sharing and organizational factors, an in-depth-research on culture, structure, reward and recognition, leadership support and social influence of the organization is observed [9-15].

#### 2.1.1 Organizational culture

Organizational culture reflects the personality of an organization [16]. Culture refers to values or norms, beliefs, principles and legends practiced in an organization that can affect how a person thinks, makes decision and acts [16-17]. In the context of this study, school culture means the extent teachers feel their school culture promotes the use of ICT in knowledge sharing.

**H<sub>1</sub>**: School Culture has significant influence on the behavioural intention to use ICT in knowledge sharing.

### 2.1.2 School Structure

Structure of the school refers to the activity of task allocation, coordination and supervision, which are directed towards the achievement of organizational goals. It can also be considered as a glass to view or perspective through which individuals see their organization [18-19]. The structure of an open and flexible organization needed to achieve the sharing of knowledge because a high bureaucratic organization limits the transfer of knowledge and the generation of new ideas [13][21]. In this study, structure refers to the extent which teachers feel the document confidentiality status information and a bureaucratic structure that exists in schools prohibits teachers to share knowledge [10][13].

**H<sub>2</sub>**. School structure has significant influence on the behavioural intention to use ICT in knowledge sharing.

### 2.1.3 Rewards and recognition

Reward means something given or received as a token given in recognition of service, effort, or achievement [22]. According to [23], reward and recognition are among the factors that can motivate people to share knowledge. In this study, reward and recognition means the extent to which a teacher's behaviour is influenced by reward or recognition to be received as a promotion, bonuses, salary increases, recognition of excellent teachers have a positive relationship with knowledge sharing [24].

**H<sub>3</sub>**. Rewards and recognition has significant influence on the behavioural intention to use ICT in knowledge sharing.

### 2.1.4 Support from leaders

[25] defines leaders as the manager of the organization who is responsible for disseminating information on the direction, motivation and encouragement to employees. [14] also argues, for a culture of knowledge sharing within an organization, leadership or management must play an important role because in the sharing of knowledge, the responsibility lies not only on workers but also more on the senior managers who need to create an environment that encourages the sharing of knowledge. In this study, leader's support refers to the extent of how the principal of the school and the management team support teachers to use of ICT in sharing knowledge in terms of moral, physical or material [17].

**H<sub>4</sub>**. Leadership support has significant influence on the behavioural intention to use ICT in knowledge sharing.

### 2.1.5 Social influence

Influence is the capacity to have an effect on the character, development, or behaviour of someone or something [22]. In the context of knowledge sharing, social influence refers to the power of human activity in a society that influences an activity. In the context of this study, social influence refers to the extent to which teachers felt friends, students, administrators, parents and the community around thoughts and emotions influence teachers to use ICT in knowledge sharing [26].

**H<sub>5</sub>**. Social influence has significant influence on the behavioural intention to use ICT in knowledge sharing.

### 2.1.6 Behavioural intention to use ICT

According to [27] and [28], behavioural intention is an indicator of individual's readiness to perform a given behaviour depends on three independent concepts: attitude toward the behaviour, subjective norms and behavioural control. In this study, behavioural intention refers to the extent to which teachers' intention whether or not using ICT in knowledge sharing in the future [29-30].

**H<sub>6</sub>**. Behavioural intention to use has significant influence on the actual usage of ICT in knowledge sharing.

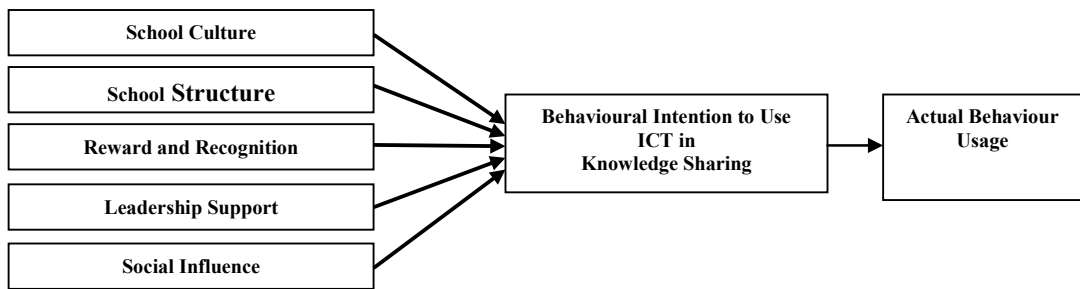


Fig. 1. The theoretical framework

### 3. Research Methodology

In order to achieve the objectives of this study, the researcher conducted a survey research using both qualitative and quantitative techniques for collecting data. The combination of qualitative and quantitative techniques or more commonly known as mixed-methods research is the best technique for it provides complementary types of information and enables the researcher to study in detail and get better results [31]. Therefore, for the purpose of this study, a survey research as well as an interview was adopted.

#### 3.1 Population and sample

As June 30, 2011, the size of population under study is about 172,729. Since the size of the sample is so huge, this study limits the sample of the population by choosing only the Perak state. Since, the data was analyzed by using Structural Equation Modelling (SEM), [32] suggested that the suitable size of the sample is more than 100 or 150 in order to get a reliable result. [33] also agreed that to analyze the data using SEM, more than 200 sample is enough and relevant. Finally, the stratified random sampling was used within Perak state teachers and questionnaires were distributed to 400 respondents. A total of 388 (97.0%) questionnaires were returned and 384 (93.3%) were utilized.

#### 3.2 The Survey Instrument

In gathering information relating to the research, a survey questionnaire was developed as the main instrument for data collection based on the theoretical framework. The measurement used in this study is adapted from several researchers [13]. However, majority of these factors; organizational culture, organizational structure, recognition and rewards are adapted [13] who studied the factors that affect the knowledge sharing quality in Malaysian public sector. Majority of his measurements were chosen since the organization studied involved non-profit organizations. To make it meaningful, the measurements are modified to suit the education sector. Dimensional criteria for measurement organizations in this study are taken from a variety of sources and is not prejudiced or biased to a study only. Table 1 shows a summary of the variables used in this study as well as the source of the measurement taken. Each constructs are measured by measurement items using a seven-point Likert – scale type. The respondents are asked whether they agreed to the statements related to organizational factors and behavioural intention to use ICT in knowledge sharing.

#### 3.4 Face and Content Validity

Since most of the items have been modified, the items need to be tested to obtain the best result. To achieve the objective of the study, the researcher used the validity of page and content. Some experts have been enlisted for the purpose of validating the content of the questionnaire items. They consist of supervisors, a lecturer from the Open

University Malaysia, a school principal, teachers and statistic expert. At this stage, the questionnaires are submitted to the experts for getting their point of view in terms of the appropriateness of the item, language as well as the quantities in order to help the researcher make improvements before distributing the items to the respondents in the pilot test.

Table 1. The summary of measurement variables

Construct	Measurement Variables	TotalItem	References
ORGANIZATION	School Culture	6	Lai & Chen (2011), Mohd Bakhari (2010)
	School Structure	4	Mohd Bakhari (2010)
	Reward & recognition	8	Lai & Chen (2011), Mohd Bakhari (2010)
	Leadership Support	5	Lai & Chen (2011)
	Social Influence	4	Hsu & Lin (2008)

### 3.5 The Interview

The structured interview was carried out to gather information on one's knowledge, attitude, value and interest; to test the hypotheses and to identify the constructs and the relationship among each other [34]. The participants used in this research consisted of nine experts from various background. The interview session was self-conducted by the researcher, where the place and time was determined by the participants themselves. The interview was recorded and all information obtained from the interviews was transcribed into the feedback form.

## 4. Results

Data collected was analyzed using descriptive statistics as well as inference statistic.

### 4.1 Reliability Test

The reliability test was conducted on the collected data. Most of the alpha value showed a score higher than 0.8 except the alpha value for school structure is 0.680 (below than 0.70 -proposed value). According to [35], the value that is close to 0.70 is still acceptable. As a result, all of the measurement items used in this study is acceptable as shown in table 2.

Table 2. Summary of the reliability test (Cronbach Alpha Value)

Construct	Items	Cronbach Alpha Value
School Culture	6	0.887
School Structure	4	0.680
Reward and Recognition	8	0.895
Leadership Support	5	0.912
Social Influence	3	0.832

### 4.2 Demographic profile of respondents

The demographic profile is indicative of respondents' location, gender, position, age, teaching experience, race and level of education. Finding shows that there were 195 (52.3%) respondents from urban and 178(47.7%) from rural areas. It indicates that the ratio of urban and rural is almost balance). In addition, it also shows that 67.6% respondents were female, with the remainder 32.4% were male respondents. It indicates that female teachers are the dominant group in the teaching profession. Besides, most of the respondents are Malay (82.3%), ordinary teachers

(78.8%) and age ranged between 31 to 40 years old. Majority of the respondents (83.4%) have a first degree and 54.4% have more than 10 years' experience in teaching.

#### 4.3 SEM Analysis Result

Structural equation modelling (SEM) was adopted because SEM can analyze all of the paths in one analysis [12]. The computer programmed used for this analysis is AMOS version 19.0. In this case, confirmatory factor analysis (CFA) was applied to test whether measures of the constructs are consistent with a researcher's understanding of the nature of that construct (or factor). As such, the objective of confirmatory factor analysis is to test whether the data fit a hypothesized measurement model. Table 3 shows the findings from the SEM analysis which represents the hypothesized model.

Table 3. SEM analysis result

Exogenous construct	Endogenous construct	Estimate	C.R.	P
Culture of school	Behavioural intention to use ICT in knowledge sharing	-0.091	-2.619	0.009
Structure of school	Behavioural intention to use ICT in knowledge sharing	0.019	0.69	0.49
Reward & recognition	Behavioural intention to use ICT in knowledge sharing	-0.005	-0.222	0.824
Leader's Support	Behavioural intention to use ICT in knowledge sharing	0.107	3.984	***
Social Influence	Behavioural intention to use ICT in knowledge sharing	0.204	3.821	***

The test revealed the following:

- Culture of school has significant effects on behavioural intention to use ICT in knowledge sharing ;
- Structure of school has no significant effects on behavioural intention to use ICT in knowledge sharing ;
- Reward & recognition has no significant effects on behavioural intention to use ICT in knowledge sharing;
- Leader's support has significant effects on behavioural intention to use ICT in knowledge sharing and
- Social influence has significant effects on behavioural intention to use ICT in knowledge sharing.
- The strongest predictor of behavioural intention to use ICT in knowledge sharing is social influence.

The research model from the findings is summarized in Figure 2, which shows structure of school and reward & recognition are not contributed on teachers' intention to use ICT in sharing their knowledge.

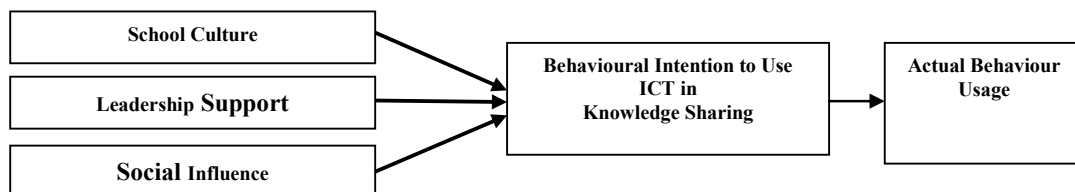


Fig. 2. Model from the findings

#### 4.4 Findings from interview

Based on the interview on organizational factors, 100% of the participants agreed leaders play a very important role to promote knowledge sharing. 88.9% of participants stated that school culture is also a factor influencing behavior intention to use ICT in knowledge sharing. Over 50% of the participants stated that social influence has significant influence on behavior intention to use ICT in knowledge sharing. However, only 22.2% of participants believed reward and recognition is a motivator for knowledge sharing using ICT. Last but not least, none of the interview participants agreed that the organizational structure influences behavior intention ICT.

### 5. Conclusion and limitations

This study attempts to examine organizational factors that include school culture, school structure, rewards and recognition, support from leaders and social influence. The relationship between school culture and behaviour was hypothesized to examine the relationship and strength between them. The results showed the school culture has a significant influence on behaviour intention to use ICT in knowledge sharing. This finding is paralleled with previous study [36-37]. The second factor examined is the structure of the school. The hypothesis was developed to study the relationship between school structure and behaviour intention. Both the quantitative and qualitative findings showed that the structure of the school has no significant influence on behaviour intention to use ICT in knowledge sharing and thus this hypothesis is rejected. Besides, this study also found rewards and recognition are not influencing behavioural intention ICT in knowledge sharing among teachers in Malaysia. This is contrary to the previous studies [10][13],[38-39]. The findings of the qualitative analysis also showed that the majority of the interview participants did not agree that reward is an important factor in promoting the sharing of knowledge using ICT.

The relationship between leader support and behavioural intentions were also hypothesized to examine the relationship between leader's support and behavioural intentions. Both of the quantitative and qualitative findings showed that leaders play an important role in influencing use ICT in knowledge sharing. Leaders can provide support either in physical form such as providing good ICT infrastructure [14] or moral support in the form of appreciation [23], [40]. This study also examined the influence of social factors. The analysis of SEM showed positive relationship between social influences on behavioural intentions, which led to the acceptance of the above hypotheses.

Overall, the results obtained from both quantitative and qualitative analysis show that the objective of this paper (to identify the relationship between organizational factors and behavioural intention to use ICT in knowledge sharing) is accomplished. Although school structure and rewards and recognition have no significant effect on behavioural intention to use ICT in knowledge sharing, school culture, leader's support and social influence are strongly positively correlated. Overall, the results have been very positive and in line with previous studies. This study is limited to 20 schools in the state of Perak as the representative sample. It would be better to distribute questionnaires to a large number of schools throughout Malaysia to get a more representative sample. For future studies, it is suggested to deploy other technique in obtaining data in addition of the survey and interview.

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