Knowledge Sharing Factors Among EIS Students In a Private University

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ABSTRACT

Knowledge Sharing (KS) plays a significant role in knowledge creation for students, especially at a territory level. For this reason, this study aims to explore the sharing of knowledge factors among undergraduate students in a Thai private university. 50 students from Bachelor of Science Program in Enterprise Information Systems (EIS) were participated. The data collection took place in February and March 2016. This study was classified as non-experimental, quantitative research using a survey approach. Descriptive statistics, inferential statistics, and correlation statistics were employed as the data analysis methods. The findings revealed that 'Perceived Usefulness', 'Technological', 'Individual', 'Classroom', and 'Intention to Share' factors were statistically significant. Despite these results, 'Organizational' factor had no influence on sharing of knowledge among these group of students.

Keywords: knowledge sharing, information sharing, classroom, multiple regression.

I   INTRODUCTION

Not only does Knowledge Sharing (KS) plays an extremely important role in the economic development of most organizations (Riege, 2005), but also an essential component of effective learning at the higher education level (Keong & Subhi, 2015; Majid & Yuen, 2006). While there were many prior studies on factors associated with KS in an organizational and a business context, a limit number of studies in an educational context has been identified (Wangpipatwong, 2009). Furthermore, KS is an importance element for intellectual discourses. It is also a demanding task that requires time and effort from students (Ghadirian, Ayub, Silong, Bakar, & Zadeh, 2014). Therefore, identifying factors that impact sharing of knowledge among students in learning communities is a critical task.

A. Purpose

The main objective of this study is to investigate factors associating with sharing of knowledge among undergraduate students in a classroom context within a private university in Thailand.

II   LITERATURE REVIEW

A. Information and Knowledge

Whereas, the literature review by the authors suggested that information and knowledge are similar in many aspects, differences do exist (Al-Naheyan, 2013; Majid & Yuen, 2006). For example, Al-Naheyan (2013) had defined knowledge as information that has value and is part of a hierarchy of data, information, knowledge, and wisdom. In contrast to Al-Naheyan, Ghadirian et al. (2014) had defined information as a message which can be unidirectional and unrequested; and knowledge is interpreted information by a one's experiences and insights within a context and contains an 'element of reciprocity'.

B. Knowledge Sharing

Knowledge Sharing or KS is an element of Knowledge Management (KM) and an important factor for intellectual discourses. In addition, KS is also one of a critical step in Knowledge Acquisition (KA). Ghadirian et al. (2014) believed in the significance and value of sharing of knowledge among students. Ghadirian et al. (2014) expected students in the learning communities to be responsible of their education proactively by 'learning with both individual responsibility and communal sharing'. Moreover, the main challenge in both online and traditional learning is to encourage KS through social interaction in various forms. Hence, KS is viewed as a social phenomenon related to interpersonal relationships and social interactions. While communities provide setting for participation and presence in the discussion, students share knowledge and negotiate what they mean to one another (Ghadirian et al., 2014). Accordingly, KS has an ability to improve students' learning process and should be influenced by students' willingness to engage in the process. Similarly, Wangpipatwong (2009) also believed that KS is the process where individuals mutually exchange their knowledge and jointly create new knowledge. Thus, increasing KS would provide a positive effect on one's performance. However, students do not always exchange their knowledge.

C. Classroom Context

At the first instance, the meaning of classroom context may appears to be self-explanatory. According to Turner & Meye (2000), classroom

context can be defined as the beliefs, goals, values, perceptions, behaviors, classroom management, social relations, physical space, and social-emotional and evaluative climates that contribute to the students' understanding of the classroom. However, the authors believe that the influences of the teacher, other students, content area, and instructional activities on learning, teaching, and motivation also play an important role of KS.

III CONCEPTUAL MODEL

The aim of this stage is to conceptualize a model for sharing of knowledge factors. It involves the formulation of study objective and review of the literature on relevant research domains. This approach also encompasses an item generation approach as adopted by Jantavongso (2007) which also employed a thorough review of literature to develop the theoretical definition of factor under examination. Twenty-one items associated to knowledge sharing have been categorized into six factors: (I_n) Individual, (C_n) Classroom, (T_n) Technological, (IS_n) Intention to Share Knowledge, (P_n) Perceived Usefulness, and (O_n) Organizational, as shown in Table 1.

Table 1. Mapping Knowledge Sharing Factors

Authors	Knowledge Sharing Factors					
	Individual	Classroom	Technological	Intention to share	Perceived usefulness	Organizational
Majid & Yuen (2006)	x					
Wangpipatwong (2009)	x	x	x			
Zamiri & Baqutayan (2012)				x	x	
Yogeesha & Gopalakrishna (2013)	x	x	x			
Al-Naheyan (2013)	x					
Usman & Oyefolahan (2014)	x		x			x
Khosravi, Ahmad, & Sedera (2014)	x		x			x
Chen, Chen, & Kinshuk (2009)	x	x	x	x		

A. Individual Factors

Individual factors refer to three items such as (I_1) Communication Skill, (I_2) Ability, and (I_3) Willingness (Al-Naheyan, 2013; Chen et al., 2009; Majid & Yuen, 2006; Usman & Oyefolahan, 2014; Wangpipatwong, 2009; Yogeesha & Gopalakrishna, 2013).

B. Classroom Factors

Classroom factors refer to three items as follows: (C_1) Final Grade, (C_2) Classmate, and (C_3) Degree of Competition (Chen et al., 2009; Wangpipatwong, 2009; Yogeesha & Gopalakrishna, 2013).

C. Technological Factors

Technological factors refer to six items of Technology Availability (T_1) Tool, (T_2) the Internet, and (T_3) Communication Channel and Technology Support (T_4) Convenience, (T_5) Relevant, and (T_6) Contact (Chen et al., 2009; Khosravi et al., 2014; Usman & Oyefolahan, 2014; Wangpipatwong, 2009; Yogeesha & Gopalakrishna, 2013).

D. Intention to Share Knowledge

Intention to Share Knowledge refers to three items as follows: (IS_1) Share Course Materials, (IS_2) Discuss New Ideas, and (IS_3) Acquire Knowledge (Chen et al., 2009; Zamiri & Baqutayan, 2012).

E. Perceived Usefulness Factors

Perceived Usefulness factors are three items as follows: (P_1) Self Satisfaction, (P_2) Idea and Knowledge Generation, and (P_3) Self-Improvement (Chen et al., 2009; Zamiri & Baqutayan, 2012).

F. Organizational Factors

Organizational factors consist of three items as follow: (O_1) Instructor and Supervision, (O_2) Workgroup, and (O_3) Knowledge Culture (Khosravi et al., 2014; Usman & Oyefolahan, 2014).

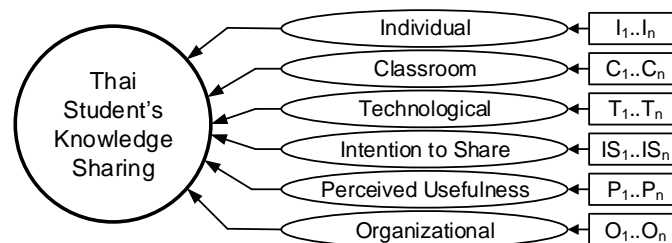These six factors identified through this process provide the insight for this study as shown Figure 1.

Figure 1. Factors for knowledge sharing

IV RESEARCH METHODOLOGY

This section describes the methodology used in this study. This study can be classified as non-experimental, quantitative research using a survey approach. The questionnaire technique was selected amongst all other survey methods to collect data in this study because it allows the participants to response freely, ensures anonymity in their convenience time and location. Furthermore, a survey approach is the most frequently used empirical research method in Information

Technology (IT) research (Shanks, Arnott, & Rouse, 1993).

A. Population and Data Collection

The target population was all of the students under Bachelor of Science Program in Enterprise Information Systems (EIS) in a private universities in Thailand (60 Students in total). Participants were notified in person during their classes and social network. The data was collected over a period of four weeks, from February until end of March 2016.

B. Instrument

The instrument consists of two main sections to obtain the responses from the participants. The first section used to collect the demographic information where the later section was to gather the opinions with the Likert-type questions. Likert-type items allow participants to indicate their responses by selecting statements on a continuum, from strongly not agreeing to strongly agreeing. An advantage of this type of item is that points can be assigned to the various responses and measures of central tendency variability, correlation, and other standard statistical measures can be calculated if required. In this study, only the five point Likert-type scale was used. It consists of the following numerical codes: 1 = strongly not agreed, 2 = not agreed, 3 = neutral, 4 = agreed, and 5 = strongly agreed.

Prior to this, the questions used in the questionnaires were first developed in English. However, as English is not the official language in Thailand, some participants may not be able to fully understand questions. The questions were presented in both Thai and English to avoid miscommunication and misinterpretation.

The instrument was evaluated by three experts using the Index of Item Objective Congruence (IOC) to rate individual items on the degree to which they do or do not measure specific objectives. Each expert evaluates each item by giving the item a rating of 1 (for clearly measuring), -1 (clearly not measuring), or 0 (degree to which it measures the content area is unclear) for each objectives. Item rates below 0.5 were not included (R. Turner, Mulvenon, Thomas, & Balkin, 2002)

C. Data Analysis

Three statistical data analysis methods were employed namely, descriptive statistics, inferential statistics, and correlation statistics. The descriptive statistical techniques were used to describe the sample in terms of frequencies, means, and standard deviations. Their use was to allow the researchers to characterize the population used in the study.

The inferential statistical techniques deal with F statistic, to assess the overall statistical significance of the model.

The correlation statistical techniques employed in this study is multiple regression analysis. The multiple regression analysis was performed to investigate the strength of associations between factors and to identify the relationship between the dependent variable (Knowledge Sharing: KS) and the independent variables (factors).

In addition, 'Path Analysis' was also employed in this study to examine relationships between important factors identified by the multiple regression analysis.

V RESEARCH FINDINGS

This section presents the details of the participants

A. Characteristics of the Participants

Fifty students had participated in this survey. These students were from Years 1 to 3 under Bachelor of Science Program in EIS in a private university in Thailand. Table 2 presents the details finding of the participants' demographic.

Table 2. General Characteristics of the Participants

	Frequency	Percentage
Gender		
Male	24	48
Female	26	52
Year Level		
Freshman	13	26
Sophomore	22	44
Junior	15	30
Senior	NA	NA
GPA		
< 2.00	2	4
2.01 – 2.50	9	18
2.51 – 3.00	14	28
> 3.00	25	50
Total	**50**	**100**

Moreover, Cronbach's Alpha (also referred to as coefficient alpha or α) was used in this study to measure internal consistency. According to George and Mallery (2003), there is no set interpretation as to what is an acceptable α value, however, a general rule of thumb should be greater than 0.7. Table 3 presents the results of analysis of internal consistency for 50 data. The analysis provided α values that met the recommended acceptable α value with the

exception of Technological. Despite this, the α value of Technological was almost 0.688 which is considered as an acceptable value following the study by Wangpipatwong (2009).

Table 3. Analysis of Internal Consistency

Knowledge Sharing Factors	Number of Items	Chronbach's alpha (α)
Individual	3	0.785
Classroom	3	0.720
Technological	6	0.688
Intention to share	3	0.861
Perceived usefulness	3	0.938
Organization	3	0.821

When the data collection process was completed, next the question's average from all the factors was carefully calculated and the results from Pearson Correlation Test are as follows:

Table 4. Analysis of Correlations

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

Table 5. Results of Multiple Regression Analysis

Model 1	Unstandardized Coefficients		Standardized Coefficients	
Factors	B	Std. Error	Beta	Sig.
(Constant)	1.934	.777		.017
Individual	.044	.116		.000
Classroom	.011	.110	.013	.000
Technological	.056	.153	.057	.003
Intention To Share	-.005	.146	-.006	.000
Perceived Usefulness	.639	.143	.697	.000

| Organization | -.058 | .105 | -.067 | .058 |

Note. $R^2 = 0.455$

Where Knowledge Sharing = dependent variable; and 1 = strongly not influenced, 2= not influenced, 3 = neutral, 4 = influenced, 5 = strongly influenced on a five point Likert-type scale.

The model explained 45.5% of the total variance in the sharing rate of the knowledge by using six factors. Based on the recommendation by Pallant (2005), this model is considered to be an appropriate multiple regression model.

The model also achieved statistical significance. The ANOVA table (Table 6) indicated that the model was significant [$F(1, 49) = 5.557$, Sig. = .000].

Table 6. Results of Analyis of Variance (ANOVA)

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.951	6	1.325	5.557	.000
	Residual	9.539	40	.238		
	Total	17.489	46			

Pallant (2005) recommend the use of the beta values (beta) under Standardised Coefficients to compare the contribution of each factor (independent variable) (Table 5). The largest beta coefficient (ignoring any negative signs) indicates that the factor makes the strongest unique contribution to explaining the dependent variable, while keeping other factors unchanged. The next task is to test the unique contributions of each factor to the prediction of the dependent variable (the Sig. value is less than .05).

Examining the beta values in Table 5, reveals that five factors are statistically significant. In order of importance they are: 'Perceived Usefulness', 'Technological', 'Individual', 'Classroom', and 'Intention to Share'. The relationships between 'Organizational' and KS was not statistically significant.

B. Path Analysis

A Path model was constructed to examine the relationship between the knowledge sharing and the five factors. Figure 2 depicts a path of a multiple regression analysis to predict the sharing of knowledge from the five factors.
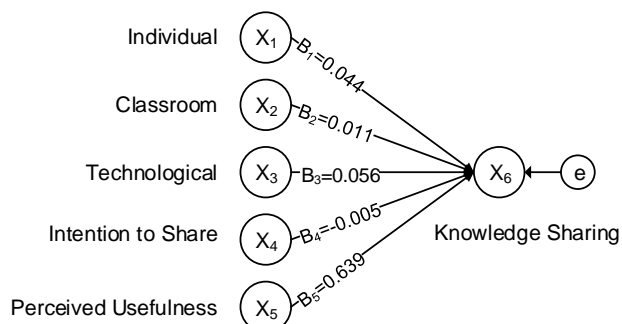
Figure 2. Path model for knowledge sharing

C. Regression Equation

The multiple regression analysis using SPSS generated the B values and the constant as presented in Table 5. From these numbers, a new equation can be generated to determine the predicted value for the sharing of knowledge:

$$X_6 = 1.934 + 0.044(X_1) + 0.011(X_2) + 0.056(X_3) - 0.005(X_4) + 0.639(X_5)$$

Where:

X_6 = Knowledge Sharing

X_1 = Individual

X_2 = Classroom

X_3 = Technological

X_4 = Intention to Share

X_5 = Perceived Usefulness

An analysis of the results indicates the unstandardized partial regression coefficient or slope that describes the linear relationship between the sharing of knowledge and one of five factors with all other factors held constant, as follows:

Each additional degree of Individual (X_1), Classroom (X_2), Technological (X_3), and Perceived Usefulness (X_5) increases the Knowledge Sharing (X_6) by 0.044, 0.011, 0.056, and 0.639 degree respectively.

Whereas, each additional degree of Intention to Share (X_4) decreases the Knowledge Sharing (X_6) by 0.005 degree.

D. Interpretation of Each of the Factors with a Negative Sign

The possible explanation for why each additional degree of the 'Intention to Share' decreases the 'Knowledge Sharing (KS)' is that there is an unwilling on the part of the participants as to share knowledge such as course materials and new ideas with their fellow participants. The participants are reluctant to share their acquired knowledge with their fellow participants.

VI CONCLUSION

Knowledge Sharing or KS plays an important role in the educational setting of the students, especially for the higher education sector in Thailand. Sharing of knowledge offers Thai students the potential to opportunities to enhance their learning. Twenty-one items in six factors were identified through (1) the objective, (2) the review of the literature on relevant research domains, and (3) the item generation approach in developing the proposed factors. 50 students were participated during February to March 2016. The findings identified that 'Perceived Usefulness' is the most important factor believed by Thai students follow by 'Technological', 'Individual', 'Classroom', and 'Intention to Share' factors, respectively. Thus, the results suggested that to encourage knowledge sharing among Thai undergraduate students in a private university, the 'Perceived Usefulness' factor should be emphasized.

VII LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

As in all research, the research presented here does have its limitations and this section considers some of these together with a number of possible directions for further research. The first, and most obvious, limitation concerns the issue of bias and representation. In this study, the survey population used may not be representative of all Thai students in a private university. One area of possible future research would be to extend the survey to other Thai universities who were not surveyed. Multiple regression was the major data analysis technique used in this study.

However, the multiple regression technique is restricted to the analysis of one single relationship at a time (Cheong & Leckenby, 2004). Other techniques exist, such as Structural Equation Modelling (SEM) technique, which may be used to examine a series of interrelated dependence relationships simultaneously and it would be an interesting area of future work to examine an analysis based on such approaches

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