

Does self-efficacy effect on knowledge sharing intention in e-learning system? A motivational factor analysis in Open University Malaysia (OUM)

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Abstract— The purpose of this paper is to examine the self-efficacy factor influence intention to share knowledge in E-Learning system within Open University Malaysia (OUM). Moreover, its objective is to identify the relationship between self-efficacy and perceived behaviour control (PBC) and intention to share in E-learning system. The current research expands a theoretical framework of online knowledge sharing factors with the Theory of Planned Behaviour (TPB). An online questionnaire survey was applied to collect data and the analysis was completed according to 583 responses from students who act in EL system of Open University Malaysia (OUM). A semi-structured interview was constructed with 10 participants who were facilitators and teachers in EL system of OUM as the case study to achieve knowledge sharing comprehensible and understandable intention. The outcomes of the study survey and interview support the fundamental statement that self-efficacy direct to influence intention to share knowledge well.

Key words — knowledge sharing (KS), E-learning (EL), knowledge sharing behavior, theory of planned behavior (TPB), self-efficacy (SE), intention to share, perceived behavior control (PBC).

I. INTRODUCTION

The new learning methods assist cooperative experience and virtual students' society improvement (Bransford *et al.*, 2000), and valuable knowledge via knowledge sharing (Zhang *et al.*, 2007). Nevertheless, these profits cannot be apprehended lacking of the energetic participation of people. Latest empirical research disclose little points of participation and unwillingness to share knowledge in EL systems and environments (Carr and Chambers, 2006; Ng, 2001), and research of crucial factors influencing participation in some systems disclose that this problem rests unsolved (Xie *et al.*, 2006). E-learning system structure confirmed through constructivist theories of learning and behavior (Prawat, 1996), and assists learning process via increasing knowledge sharing behavior in learning environment (Honebein, 1996; Wilson, 1996). As Hiltz and Turoff (2005) referred, "EL is a modern communicative procedure which gives enjoyment to distance learning students, compared to traditional classrooms (face to face)". In spite of the attractiveness of the EL environments, there are still major challenges in the willingness to use EL systems, one of which is that the students do not want to share their knowledge and experiences (Zhang and Faerman, 2007).

II. Operational definition

E-Learning system

EL systems are the principal learning surroundings in Higher Education. EL is recognized as new applications by Learning Management System (LMS) and also Course Management System (CMS) in distance learning universities and institutions (Artino, 2010). Kanuka and Rourke (2008) discover the modifications that are happening in higher education (HE) as an outcome of the use of EL system. They find that some technical system prepares chances for developed accessibility, compatible with the objective in application of modern technology in education environment. Nevertheless, it is also related to negative influences, as teachers and learners experience to gather a lack of a feel of belonging and responsiveness of borders.

Self-efficacy

Self-efficacy indicates the degree of an individual's confidence to perform and to coordinate the knowledge and activities in daily educational tasks as required to obtain knowledge, experiences, and successful performance in the EL system environment. As Ormrod (2006) defined it, "Self-Efficacy is the measure of the belief in one's own ability to complete tasks and reach goals". Bandura (1995) also believed that "Self-Efficacy is individual's beliefs about their competencies to create success that impact on procedures growing their lives' performance". A suggestion is that PBC might be divisible into two separate constituents. These would be "SE beliefs", which is defined as the level of enactment of the behaviour which is easy or difficult for the individual. The next constituent is "perceived control over the behaviour", which reveals the level at which the individual perceives the enactment of his/her behaviour is under his/her control (Tavousi et al., 2009).

Theory of planned Behaviour (TPB)

Theory of Planned Behaviour (Ajzen, 1985) is recognized as an advanced version of the theory reason action (TRA). Fishbein and Ajzen (1991) completed obligatory by the second representation 'incapability to contract with Behaviours done which individuals have imperfect optional control. TPB recognizes actual performed Behaviour as a people's effort of a convinced Behaviour is performed by his or her/his intention to fulfill that Behaviour. Attitude towards the actual Behaviour, Subjective Norm (SN) about involving in the Behaviour, and perceived Behaviour control (PBC) are supposed to impact intention and online learning by Behaviour in TPB producer (Baker and White, 2010). Moreover, a number of current researches have shown the substantial connection between SE and Perceived Behavioural Control (PBC) based on TPB (Taylor and Todd, 1995; Sheng and Noe, 2010) then SE can help turn the person's behaviour towards KS (Lin et al., 2009; Wasko and Faraj, 2005; Lin, 2007).

Intention to Share Knowledge

According to Ajzen (1991), the Intention is the most important cause of people's Behaviour. The sophisticated purpose will be achieving certain Behaviour, the advanced chances of the authentic enactment of that exact Behaviour.

Perceived behaviour control (PBC)

PBC includes some features that affect the KS intention in producing the actual behaviour in terms of individual's abilities, accessibility, skills, and feelings; also it is supposed that PBC is recognized by the whole complex of accessible control beliefs (Ajzen, 1991). In this research, PBC is associated with electronic materials, accessibility to an EL system, a technical support system as facility conditions, and self-efficacy in the use of an EL system.

iii. Significant of the Study

Chiu et al. (2006) believed that the most important problem in predicating the online learning communities is the lack of contributions and willingness to share knowledge in the online communities. It is necessary to recognize the motivational factors in order to encourage students in performing and sharing their knowledge and experiences in learning environment (Ma, 2009; Ellis et al., 2002; Liu, 2008). Self-efficacy is the one of important factor that effects on knowledge sharing behavior (Lin et al., 2009; Wasko and Faraj, 2005; Lin, 2007; Chen et al., 2009). The current research creates empirical and theoretical contributions about SE and KS in EL environment. The conclusions have empirical consequences for on-line KS in an EL system. The examination of the practical research of EL shows that a few studies have been funded to increase KS by behavioral mechanisms like SE (Chen et al., 2009), such as the requirement of students to use the interactive connections between students in EL systems. Previous research has concentrated on gaps in interaction due to the lack of physicality or wave signals compared with face-to-face communication. Nevertheless, current, practical research indicates that the web is an intermediate instrument that encourages the quick construction of neighboring connections that support the above period, and even promote involvement in the global geography. Prior EL and KS research has concentrated on the influence of technical factors on the adoption and continue behavior of EL and KS, and a have rarely explored the students' self-efficacy factor influencing the promotion and encouragement offered to students regarding participation in EL activities (Bibi Alajmi, 2008; Kamarul, 2012). This research is also significant as it utilizes both deductive and inductive tactics. On the one hand, it produces a theoretical structure and arranges the constructs under the categories within that framework while on the other hand, through an inductive approach,

it validates the constructs that could be combined in the online KS model.

IV. Research Questions

According to the statement of the research problem explained before, the research questions have developed the following questions:

1. Does self-efficacy influence on knowledge sharing intention in E-learning system?

V. Research Objectives

The purpose of the research is to discover the relationship between the motivational knowledge sharing factors and intention to share knowledge in an EL system. In connection to this, the researcher's other purpose is to achieve the following objectives:

To identify the influence of self-efficacy on knowledge sharing behaviour in E-learning system.

VI. Research Hypotheses

The questions and objectives of the current study can be further studied through the following hypotheses:

- H1.** Self-Efficacy has a positive effect on Perceived Behavioural Control in the EL system.
- H2.** Perceived Behavioural Control has a positive effect on the intention to share knowledge in the EL system.

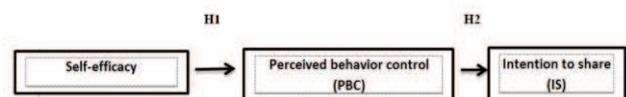


Figure 1.1 Research Model and Hypothesis

VII Open University Malaysia (OUM)

OUM was named as Open Distance Learning (ODL) in 2000. It is the seventh private university in Malaysia and it is owned by Malaysia's eleven public university associations. Based on the philosophy that learning is

supposed to be democratized, OUM has concentrated on generating a reasonable and easy corridor to Higher Education system with significant position on flexible entrance necessities like a student-friendly education system, and a blended learning method with mixtures of dissimilar forms of education. This system was planned to perform different features based on the student's requirements, information and communication technologies and internet tools.

VIII Research Method

Research methodology has many classifications, such as, research methodology in terms of qualitative and quantitative methods (Williams, 2007). These approaches can be used as single and mixture method by investigators linked in OUM. For this study, mixed method is performed. Researcher has used both qualitative and quantitative approaches and he also examines and establishes the data gathered from selected cases (Creswell, 2012). Studies show that Quantitative and qualitative approaches are appropriate to grow the fortes and the reducing of weaknesses of the research methods (Johnson and Onwuegbuzie, 2004). Thus, in this method we can say that the findings and outcomes are more valid. Furthermore, Quantitative study shows the actuality of the cause and effectiveness of relationships among variables. On the other hand, qualitative study approaches to discover the implications and outlines, consider to particularly the activities and records carefully. There are many researches in the Knowledge management area in which utilized the qualitative and quantitative methods as their key resources to collect data and to use the features of individual behavior constantly, which are frequently veiled (Nonaka and Takeuchi, 1995; Chennamaneni, 2006; Jones, 2007; Bock *et al.*, 2005; Ma, 2009; Stewart, 2008; Vashisth *et al.*, 2010; Jewels and Ford, 2006).

IX Instrument Development

Researcher gathered the data in two steps. Firstly, the online questionnaire as a survey instrument is distributed. After the online questionnaire, the interview questions followed to improve the survey, and to evaluate more appropriate outcomes and to develop the survey's validity and reliability. In addition, the investigator applied online questionnaire as pre-test to evaluate the 25 questions and to enhance its value. In this research, a pre-test investigation was applied with emphasizing on the validity of citing knowledge sharing in the EL.

X. Interview

This research has shown the semi-structure interview questions that are comprised with; the research was created in 6 knowledgeable interviews selected online and off line by the facilitators and teachers in different faculties of OUM. The data have been gathered during two semesters in 2012-2013 academic years. In semi-structured interviews where some facilitators, technical administrators, and some online teachers were in charge of distance learning system or EL. As revealed, the questions on the interview were open-ended; and each interview was about 10 to 15 minutes created on their arrangement, while some of the interviews were voice-recorded. The knowledge sharing intention factors and the effects of the knowledge sharing on the success of the EL were discussed in the case study area. Table 1.1 shows the interview questions.

XI. Questionnaire

Instrument Plan

Questionnaire survey based on the research conducted in DTPB is composed of two main sections. In the first part of the questionnaire, respondents were asked questions about personal characteristics, such as sex, age, educational level, duration of study, study courses. This section uses EL system as a moderating

variable in the study. The second section of the questionnaire is extracted from the DTPB model. Question components are measured as well as what the students ask and a Likert scale was used to rank it from very low to very high. The investigator as a viewer can approve examination methods of collecting data and assessments by viewing how the learners engaged in learning activities in EL system. The five-point Likert scale was applied to measure each paradigm which comprised 1= strongly disagree to 5= strongly agree. The Likert response allocated numeric values to help the analysis of the answers.

Table 1.1 The interview questions

NO.	QUESTIONS
1	Are the students learning in the EL system, frequently exchange and share knowledge and experiences with others? If not, what factors and situations preventing them? If you think yes, why? And what factors affect it?
2	In your opinion, are the students in E-Learning system interested in participating and willing to share their knowledge and courses with other students?
3	In your opinion, do they (students) share knowledge and develop learning experiences within EL system easily? Do they think that knowledge sharing is useful?
4	In your opinion, what are the individual factors that effect on the student's attitude toward knowledge sharing?
5	Do they (students) think that they are comfortable and can trust and share better by EL system?
6	Is EL system compatible with students' values, current requirements and previous experiences?

Code	Items	Mean	SD
SE1	I have confidence in my ability to contribute and share the valuable knowledge in the E-learning system.	3.72	.76
SE2	I have the expertise needed to provide valuable knowledge into the E-learning system.	3.53	.82
SE3	I am confident that I can post new knowledge on discussion forums and share my experiences, author an article, insights or expertise by engaging in dialogue with others in the E-learning system.	3.64	.83

Table 1.2 Statistics for Self-Efficacy (SE)

Code	Items	Mean	SD
PBC1	Knowledge sharing behavior is completely within my control.	3.69	.76
PBC2	I can choose whether or not I share my knowledge in E-learning system.	4.02	.69
PBC3	Knowledge sharing behavior in the E-learning system goes well with my habits.	3.70	.73

Table 1.3 Descriptive Statistics for Perceived Behavioral Control

Code	Items	Mean	SD
IS1	My chances of success in an e-learning system are higher when I share my knowledge with other students.	3.9400	0.77869
IS2	Without interaction and sharing experiences with other students in a learning group I will not be able to complete an e-Learning course successfully.	3.7376	0.88209
IS3	Student's KS behaviour is important for continuing and using an e-learning system successfully.	3.1492	0.68114
IS4	I often participate in KS behaviour in the e-learning system.	3.6158	0.85347
IS5	I usually spend a significant amount of time conducting KS behavior in the e-learning system.	3.4494	0.83754
IS6	I like to get myself involved in a discussion of a wide variety of topics rather than specific topics about e-learning courses.	3.7187	0.82265
IS7	I actively share my knowledge with others in an e-learning system.	3.4648	0.86853

Table 1.4 Descriptive Statistics for Intention to KS (IS)

Table 1.5 the learning centers that collect questionnaire

NO.	LEARNING CENTER (BRANCH)	STUDENTS
1	Bangi Learning centre	70
2	Ipoh Learning centre	85
3	Johor Learning centre	80
4	Kelantan Learning centre	68
5	OUM KL center	180
6	OUM Petaling Jaya (PJ) Learning centre	100
		583

XII Construct Measures

The research theoretical model of this research is comprised of following paradigms, the independent variables which comprise two factors (self-efficacy, perceived behavior control (OBC)). Additionally, dependent variable which intention to share knowledge, contributes in this study, There are also thirteen main constructions of the hypothetical model that are used in this study. Knowledge sharing intention plays a double role: dependent and independent paradigms. The 43 questionnaire items measured the relationship between variables; these statements were calculated according to a 5-point Likert scale which include 1=strongly disagree to 5= strongly agree.

XIII Descriptive statistic of the questions and variables

Descriptive statistic questioner includes quantity value, value, mean, standard deviation drawing was taken for each question that its results is visible in table 1.6.

Table 1.6 Descriptive statistics of the questions

Q?	Min	Max	Mean	Std. Deviation	Skewness	Kurtosis
IS1	1	5	3.94	0.77	0.778	0.819
IS2	1	5	3.73	0.88	0.882	0.121
IS3	1	5	4.14	0.68	0.681	0.722
IS4	1	5	3.61	0.85	0.853	0.48
IS5	1	5	3.44	0.83	0.837	0.646
IS6	1	5	3.71	0.82	0.822	0.525
IS7	1	5	3.46	0.86	0.868	0.436

PB C1	1	5	3.69	0.76	-0.644	1.157
PB C2	1	5	4.02	0.69	-0.524	0.755
PB C3	1	5	3.69	0.73	-0.601	1.251
PB C1	1	5	3.69	0.76	-0.644	1.157
SE1	1	5	3.72	0.76	-0.625	1.322
SE2	1	5	3.53	0.82	-0.689	0.998
SE3	1	5	3.64	0.83	-0.643	0.843
SE1	1	5	3.72	0.76	-0.625	1.322

IS: Intention to knowledge sharing Behavior, PBC: perceived behavior control, SE: self-efficacy,

XIV Descriptive statistic of variables

Dimensions of each question are made then descriptive statistic include standard deviation and mean is gotten by compute device in SPSS software that it's results are presents in table 1.7 the results of above table defines the people are studies have gotten advantages more than supposed mean, once these aren't limitation for their learning as electronic and their condition is suitable in terms of the dimensions, special in subjects like attitude toward knowledge sharing (AI) with mean 4.02, succession in electronic teaching system (ES) with mean 3.94.

Table 1.7 Descriptive statistical of variables

Variables	Mean	Std. Deviation
Intention to knowledge sharing Behavior (IS)	3.56	0.70
Perceived Behavior Control (PBC)	3.80	0.56
Self-Efficacy (SE)	3.63	0.70

XV Qualitative Analysis

Interviews were carried out on the system facilitators and teachers in OUM learning system. As mentioned earlier, the interview was done after the results from the survey research. In order to verify the research results from the survey method about the antecedents was used qualitative method as a supplementary technique with the answers from the case study that cooperate the self-efficacy effects on the knowledge sharing intention in the EL system. This part of the study will report the responses of the participants in the interview and how those responses give answers to research questions.

XVI Participant Information

According to the quantity of individual interviews that was dependent on participants from the OUM as case study. Since the research needs some explanations about details of study dimensions, the interview questions were requested that contribute by a few participants in OUM as case study. Choosing interviewees were beneficial and only integrated a small from the case study (Saunders *et al.*, 2007). The interviewees who were conducting as individual interviews are recommended around 10 to 15 (Hill *et al.*, 1997). Participants in this study consisted of 10 system facilitators and teachers engaging in the learning practice within the OUM e-learning system.

XVII Conclusions and recommendations

To answer the questions related to hypotheses, four main questions were proposed and investigated. These research questions are:

Does self-efficacy effect on knowledge sharing intention in e-learning system?

Self-Efficacy (SE), the first effective factor of PBC, refers to individuals' belief that their own educational competences, to a greater extent than others', have a critical function in motivating them to accomplish and control their behaviour. Investigators have proceeded to prove its information validity as well as its convergent validity in predicting general motivational findings, in terms of learners' practice selections, effort, persistence, and emotional reactions. SE attitude has been found to be responsive to understated modifications in learners' performance background, to become involved with self-regulated education procedures, and to mediate

learners' educational accomplishment (2000 Academic Press). Supporting this, the eleventh hypothesis is designed to examine the effect of Self-Efficacy on Perceived Behavioural Control.

H1: Self-Efficacy has a positive effect on Perceived Behavioural Control in the EL system.

Perceived Behavioural Control (PBC) is the third effective factor which determines students' desire for KS in the EL system. It refers to people's perceptions of their ability to perform a given behaviour. It also points to the degree of individual control over transferral of information through the EL system. The higher the degree of control, the greater will be the desire for KS in the EL system. In order to examine the effect of Perceived Behavioural Control on KS among the users of the EL system, the next and fourth hypotheses of the research were designed.

H2. Perceived Behavioural Control has a positive effect on the intention to share knowledge in the EL system.

Table 1.8 Hypothesis Testing Results

NO.	Relationship	Hypotheses	Results
1	Perceived behavioral control and intention to share knowledge	H2. The perceived behavioral control has a positive effect on the intention to share knowledge in EL system.	The findings of the research indicate that perceived behavioral control has a positive impact on intention to share knowledge.
2	Knowledge Self-Efficacy and perceived behavioral control	H1. Self-Efficacy has a positive effect on perceived behavioral control in EL system.	The findings of the research supported that Self-Efficacy has a positive impact on perceived behavioral control.

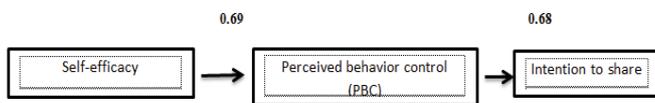


Figure 1.2 Results of Structural Modelling Analysis

XVIII Restrictions of the study

There were some limitations in the research method and data collecting. This often happens in similar studies done in behavioral field. There are also restrictions in the examination of EL system in OUM as Open University which educates through online system where students are not required to attend classes in the traditional classroom as in face to face education. Secondly, the investigation of some variables in this research like intention to share knowledge is sometimes very difficult because the control on effective changes on this structure is hard, for example, the application of the whole factors of knowledge sharing Behavior in research model. Another research limitation is the lack of examination tools for all main factors on students' knowledge sharing behavior in EL system. The third limitation was to adjust factors in relation to the intention to share knowledge in online environment that students can use many tools and technologies based on their skills and abilities.

XIX Recommendations for Further Study

In the other aspect of this research it is also recommended that the relation among research structures must be investigated for successful results as what this current study did, for example, the investigation of the main factors on intention to share, where it introduced two levels of intent to share. There are three more effective structures in each level. Thus, the effective examination of the factor of the variable such as Self-Efficacy on this study will approve the

student's intent to share knowledge in EL system if these factors and variables will be applied. And because of this, the need to work on more studies and examining the related theories and models in the future can be much easier.

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