DETERMINANTS OF KNOWLEDGE SHARING INTENTION IN E-LEARNING

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DEDICATION

This work is dedicated to my wife, Masoumeh, who always encouraged me to study and to my two children, Mohammad Hossein and Fatemeh Hosna. You made tremendous sacrifices during my doctorate studies, which made it possible for me to complete this difficult and long journey. The accomplishment of my Doctorate degree is a task that I would not be able to complete without your support and understanding. You provided the encouragement necessary for me to overcome the challenges and finish this thesis.

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ABSTRACT

Knowledge resides within a human being and it is hard to be shared to others. With the proliferation of information and communication technologies, and virtual communities in education, there is an expanded opportunity for the public to be involved in knowledge sharing. However, reluctance to share is one of the main impediments of knowledge sharing. The aim of this thesis is to develop an integrative understanding of the determinants supporting or inhibiting students' knowledge sharing intention in E-learning system. Data were gathered from 583 students who are studying with the E-learning system in Open University Malaysia (OUM) using online questionnaire survey. Semi-structured interviews were constructed with 10 participants who are facilitators in E-learning system of OUM as the case study to achieve comprehensible knowledge sharing and understandable intention. The analysis of quantitative data was made using structural equation modeling (SEM) technique and LISREL. Four individual factors namely trust, perceived ease of use, perceive usefulness, educational compatibility as well as four social environment factors such as a friend's influence, superior influence, self-efficiency, and conditions were used in designing the hypothesis for this study. The outcome analysis showed that there are significant links between individual factors and these also influenced relationship between the social environment determinants. Similar to previous studies, the findings showed positive links between attitude and intention to share, and the subjective norms and perceived behavioural control that influenced intention to share as moderators. The applied model in this study included the Decomposed Theory of Planned Behaviour (DTPB) and harmonized by Social Cognitive Theory (SCT) augmented with individual and social environment factors which have been proven in the study to influence students' knowledge sharing intention within selected E-learning system. This results of the research have provided important theoretical and practical contributions to assist designers and managers facilitate E-knowledge sharing between students.

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EL	-	Electronic learning
KM	-	Knowledge management
KS	-	Knowledge sharing
TPB	-	Theory of Planned Behavior
DTPB	-	Decomposed Theory of Planned Behaviour
SCT	-	Social cognitive theory
HEs	-	Higher education system
PEOU	-	Perceived Ease of Use
PU	-	Perceived usefulness
SN	-	Subjective norm
PBC	-	Perceived behavioral control
IS	-	Information system
IT	-	Information technology
ICT	-	Information communication technology
SE	-	Self-Efficacy
LMS	-	Learning management system
CMS	-	Content management system
LCMS	-	Learning content management system
SCORM	-	Sharable content object reference model
ADL	-	Advanced distributed learning
SPSS	-	Statistical package for social science
AGFI	-	Adjusted goodness-of-fit index
WWW	-	World wide web
HEs	-	Higher education system
SEM	-	Structural equation modelling
VLE	-	Virtual learning environment
RMSEA	-	Root-Mean-Square Error of Approximation
NNFI	-	Non-normed fit index
CFI	-	Comparative fit index
IFI	-	Incremental fit index
GFI	-	Goodness of fit index
TAM	-	Technology acceptance model
KSI	-	Knowledge sharing intention
FC	-	Facility conditions
FI	-	Friend's influence
SI	-	Superior's influence
EC	-	Educational compatibility

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CHAPTER 1

INTRODUCTION

There are significant benefits for academic and higher education institutions that expand their activities to manage knowledge to achieve the learning goals (Kidwell *et al.,* 2000). Davenport and Klahr (1998) believed that higher education institutions can expand and encourage different ideas through KS behavior among students to help them improve their knowledge, skills and abilities. Thus, the higher education institutions have created a high sense of shared knowledge to be recognized as high esteem institutions within society (Keyes, 2008).

Recent decades have seen an important increase in the use of ICT (Information Communication Technology) within the learning process by HEs (Higher Education systems). Not only Higher Education institutions but also the world's economy and industry (Maldonado *et al.,* 2009) have come to rely very much on ICT. Much research has been done in universities and academic institutions on computer-based learning and internet-based learning that has beenclosely engaged with knowledge management systems and their processes such as storing and sharing knowledge (Wolf *et al.,* 2011; Chen *et al.,* 2009). Numerous universities and HEs have distributed the new learning method based on students' desires particularly for web-based learning or e-learning (Artino, 2010).

Therefore, the current practical research aims to identify the determinantsthat assist Knowledge Sharing Intention (KSI) between students in e-learning (EL) environments. This chapter will present the problem of research, the background of the study, the research questions (RQ), the research objectives (RO), the gaps in the study and the scope of research.

1.1   Background of the Research

In recent years, a number of studies directed to the National Centre for Education Statistics of the U.S. Department of Education and worldwide have stated a continually growing number of instructive organizations proposing and planning to offer EL in the future years (Snyder and Dillow, 2012). As Radford (2012) stated about 4.3 million undergraduate scholars, or 20% of wholly undergraduates, acquired at least one EL course. Around 0.8 million, or 4%, of all undergraduates took their entire program via EL.

This growth in the number of students contributing in EL is due to the easiness and convenience that the Internet makes for communication.Lately, usage of the EL method has sustained to growth at an important amount of between 10% to 15% annual at universities and HE institutions (RocSearch, 2003). The record the progress of EL at HEs all over the world is very high (Littlejohn *et al.,* 2008; Shee and Wang, 2008; Anastasiades *et al.,* 2008). Universities have quickly extended their EL system offerings to provide almost $4 million. Allen and Seaman (2008) showed that 60% of principal colleges direct EL critically and considerably to strategic locations and more than 50% of these were persuaded to accept the EL system by observing the students' learning performance and experiences (Allen and Seaman, 2008).

In Malaysia, under the Vision 2020, Malay needs to grow the civilization in becoming an informed and educated civilization. Furthermore, with the increasing price of traditional education system, knowledge and technology explosion, Malaysia has observed EL as a approach for providing learning and training chances (Abdul Rahman, 1996). EL programmes has previously been in place on a modest scale in Malaysian universities of HE such as Sekolah Professional dan Pendidikan Lanjutan (SPACE) in Universiti Teknologi Malaysia (UTM), Pendidikan Jarak Jauh in Institute Technology Mara (ITM), Pusat Pendidikan JarakJauh in Universiti Kebangsaan Malaysia (UKM), Institute of Distance Education and Learning (IDEAL) in Universiti Putra Malaysia (UPM) and Pusat Pendidikan Jarak Jauhin Universiti Sains Malaysia (USM), especially MyVLE in Open University Malaysia (OUM). Each university has its own extension programme (Abu Mansor, 1998).

On the other hand, Knowledge sharing (KS) has become as an essential part of Knowledge Management process (Marjani, 2012). The advanced positivist's view of knowledge believes that knowledge sharing is a consensual understanding positioned in daily experiences and practice (Peters and Burbules, 2004), and according to this

consensual, knowledge is discussed between a group of individuals to achieve a common goals and experiences. Since knowledge is currently the main valuable object, institutions are looking for creating the system which gather individuals' knowledge for expanding and sharing between members in the environment (Jones, 2007; Ruuska, 2005; Bartol *et al.,* 2009). So, Collison and Cook (2004) claimed that the in learning environment, knowledge-sharing behavior has been created and extended among organizational members to achieve an effective learning.

The structure of EL system confirmed using through constructivist theories of learning and behavior (Prawat, 1996), and assists in the learning process by increasing KS behavior in the learning environment (Honebein, 1996; Wilson, 1996). EL tools have great potential in creating, sharing and reusing knowledge (Murugaboopathi et al., 2012). Pragmatic research implies increases via virtual education in terms of collaborative virtual learning (Zhang *et al.,* 2007), EL systems in society (Conrad, 2005), and asynchronous learning (Mazzolini and Maddison, 2007). It is often argued that the usage of communication technologies will develop a student's contribution and interaction compared with traditional learning in a learning environment (Haythornthwaite, 2002). An individual can contribute to creating the data and knowledge repositories by adding his/her content and experiences and encouraging sharing with others in an internet based learning environment (Gharakhani and Mousakhani, 2012). In order to learn better, EL systems and communication technologies can increase interactive activities, and participation methods, and they can positively influence the provision of education (Kapur and Kinzer, 2007). By using several tools of technology, the level of the students who share knowledge and its subsequent influence on individual behaviors can be measured (Fischer and Mandl, 2005). Then, restricting EL system objectives and planning facilities that face the procedure necessities of the knowledge student community as necessities required by structural knowledge procedures and sharing are imperative (Ruey-Shun and Chin-Hsiao, 2007).

1.2   The Statement of the Problem

Universities and institutions face many challenges in the EL implementation and process (Ehlers, 2004) and designers are involved with many issues concerning KM in the learning process (Brophy, 1999; Chen *et al.,* 2008). Yet many researchers claim that knowledge is frequently hidden in people's minds, and it is difficult to persuade and to encourage people to willingly participate in KS (Davenport and Prusak, 1998; Guzman,

2009; Lin *et al.,* 2009; Alavi and Leidner, 2001; Mitchell *et al.,* 2008; Nonaka and Takeuchi, 1995; Nonaka, 1994). The capability and willingness of people to participate in KS is a significant design issue for institutions (Hsu *et al.,* 2007; Lam and Lambermont-Ford, 2010; Ajmal *et al.,* 2009; Guzman, 2009; Nonaka and Takeuchi, 1995). Consequently, one of the important concerns for diverse HEs is how to motivate and encourage students' KS behaviour among student communities (Hanisch *et al.,* 2009; Hsu *et al.,* 2007; Nonaka, 1994; Cribb and Hartomo, 2002).

Despite the student increase in EL, Solis (2010) commented that nearly 70% of on-line learning communities are not willing to involve in sharing their knowledge with others. Researchers have shown that the sharing of knowledge between students is critical for learning systems because knowledge is achieved not only at the personal stage, but also at the group stage via interactions between individuals (Hernández *et al.,* 2007; Koretsky *et al.,* 2008; Beauchamp and Kennewell, 2010). Chiu *et al.* (2006) believed that the most important problem in predicating on-line learning communities is this lack of willingness to share knowledge in the on-line communities. Thus, it is significant to understand why persons choose to share or not to share knowledge with friends and other team students when this option is available to them. It is also important to identify what determinants could motivate and encourage KS intention between students.

The biggest challenge of academic principals is to find the Determinants that could encourage students to use the sharing option in the system (Wahlroos, 2010). Therefore, it is necessary to recognize the Determinants in order to encourage students in performing and sharing their knowledge and experiences in the learning environment (Ma, 2009; Ellis *et al.,* 2003; Liu, 2008). It is essential to examine and to have a better understanding of Determinants of students' on-line KS intention.

Consequently, by recognizing the influencing factors and improving them, it will be possible to answer the question "How could an EL system motivates students to share knowledge with others as individuals and as a member of a group?" and by improving the new KS technologies, it will be possible to show how they can exchange and share their experiences and knowledge within communities (Addison *et al.,* 2010). Although some studies have examined the motivational factors that encourage or discourage KS between members of a group, these are poorly understood (Nita, 2008; Stewart, 2008; Connelly and Kelloway, 2003; Lin, 2007).

Five arguments should be renowned when talking around virtual learning and KS.First, students might not incessantly be willing to be involved in KS (Fisher and Fisher, 1998), and definitely might be unwilling to share their knowledge in any environment (Kelloway and Barling, 2000). Second, in spite of the virtual applications being an "encouraging" mechanism for creating "powerful EL student groups" (Brown, 1999), for KSI to occur, a team or people should be willing to participate in behaviors that facilitate it (Rosen *et al.,* 2007). Third, while the definitive objective of cooperation is tocreate knowledge, collaboration and interaction do not continuously consequence in KS (Fischer and Mandl, 2005; Jeong and Chi, 2007). Persons might not constantly be willing to involve in KS (Fisher and Fisher, 1998), and even personnel might be unwilling to share theirknowledge in EL environment with others (Kelloway and Barling, 2000).

Fourth, though the Internet is apromising" instrument for generating "influential online learning communities" (Brown, 1999), for KSI to happen, studentsshould be willing to involve in KSI that assist it (Rosen, Furst, and Blackburn, 2007). For instance, KS might fail tohappen when persons believe that their knowledge does not have value (Haldin-Herrgard, 2000), or when they may perceive it as highly valuable and be reluctant to share it with others, oronly share it selectively (Leidner, 1999). Fifth, EL students' individual determinants and environmental factors might affect their KSI. Therefore, KS may not constantly occur as anticipated, and this challenge supports the reasoning for reviewingdeterminants that contribute to KSI in EL system.

1.3   Gap in Research

Despite increasing interest among information system investigators regarding the KS process, there is an incomplete and disjointed understanding of on-line KS behaviour in VLC (Virtual Learning Communities), particularly EL platforms (Paroutis and Al Saleh, 2009). Scholar's effort to survey the similarity of the objectives and process, the strategies of evaluation, and the various KS procedures are common in KM and EL (Vasilyeva *et al.,* 2005). In addition, there are many studies on EL (Wenger, 2000; Wenger and Snyder, 2000; Haythornthwaite and De Laat, 2010) and KS behaviour in the learning environment (Hilmie *et al.,* 2012; Kim and Ju, 2008), but there is little research concentrating on the KS issue in an on-line learning system (Lu *et al.,* 2009; Chen *et al.,* 2009) and little empirical evidence (which is mostly restricted to qualitative studies) concerning the Determinants affecting members who use an EL system as a social media

for their KS intention(Chen *et al.,* 2009; Cheng *et al.,* 2009). Furthermore, most past research is mainly devoted to the educational division but has not focused on students' KS behaviour or intention (Kim and Ju, 2008; Chen *et al.,* 2009).

Kalinga (2008) believed that motivating students to share resources is a main challenge in the EL system as a KM system and this issue should be resolved; therefore, there is considerable research on the KS process in a learning environment (Hassandoust and Perumal, 2011; Jin Tan, 2009). Nonetheless, there has been only limited investigations of why members of an organization or on-line community would be interested or otherwise in sharing their knowledge, and studies specialising in an on-line learning environment are particularly limited (Park and Choi, 2009; Liu, 2008; Hills and Overton, 2010).

Thus, there are some studies that have investigated the different Determinants with various classifications affecting KS behaviour in organizations and on-line communities (Aliakbar *et al.,* 2012; Ardichvili *et al.,* 2003; Han and Anantatmula, 2007; Lin, 2007; Riege, 2005), but most have referred to organizational context (Jo and Joo, 2011; Marjani, 2012) and a few have addressed KS intention in an on-line learning context or virtual communities as social environment (Kong *et al.,* 2009; Sharratt and Usoro, 2003; Carr and Chambers, 2006). For instance, some research classifies the determinants into organizational and individual (Brown *et al.,* 2006; Bock *et al.,* 2005; Nita, 2008; Stewart, 2008; Connelly and Kelloway, 2003; Lin, 2007), external and internal (Aliakbar *et al.,* 2012), and technological and individual (Liaw and Huang, 2007), and environmental factors (Glanz *et al.,* 2005) that encourage or discourage KS between students leading to improvements in understanding, learning, performance and success.

According to suggestions for future research from on-line KS researchers, the one of most important issues is to survey and classify the Determinants that can influence students' KS intention to enhance the better understanding of the students' behaviour within the learning environment (Ma, 2009; Wahlroos, 2010). For example, Chong et al. (2013) commented that "it will be valuable for other investigators to pursue an understanding of the individual variables that affect KS behaviour between learning communities". They believed that future research should expand the literature review to assess the huge scope of on-line KS behaviour and the determinants that motivate users to become involved in the learning program. For example, research has been conducted into the importance of the trust factor in various spaces, such as, e-commerce, e-health

systems, computer networks, and social networks (Alboaie and Buraga, 2009; Bhuiyan *et al.,* 2010), while relatively little has been conducted regarding the trust factor in EL systems.

Furthermore, as in previous research, there are some problems regarding three aspects of this research (Nor Ashmiza, 2012): (1) There is a lack of KS research in the area of HE; (2) There is a lack of research on students' behavior in an EL system as an on-line environment; (3) There is a lack of determinants in order to share knowledge using an EL system. Thus, there are three main areas in this research: (1)The identification of KS enablers in the EL environment (i.e. people, interactive environment, and applications); (2) the investigation of a collaborative EL system; and (3) identification of the Determinants that influence KS intention based on suitable theories relating to the behaviour and learning context, such as TPB, DTPB, SCT and combination of all these theories.Educators need to have sufficient information about the many determinants contributing toEL students' knowledge sharing intention in in order to be better able todesign instructional environments that will encourage knowledge sharing in EL.

1.4   Research Questions(RQ)

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

1. Does attitude toward knowledge sharing affect knowledge sharing intention among students in an EL system?
2. Do subjective norms influence the knowledge sharing intention among students in an EL system?
3. Does perceived behavioural control affect the knowledge sharing intention in an EL system?
4. Do individual determinants i.e. trust perceived ease of use, perceived usefulness and educational compatibility affect attitudes toward knowledge sharing?
5. Do social environment determinants, i.e., friends' influence, superiors' influence, self-efficacy, and facility conditions affect knowledge sharing intention?

1.5   Research Objectives (RO)

The purpose of the research is to discover the relationship between the Determinants of KS intention in an EL system. In connection to this, the other research purpose is to achieve the following objectives:

1. To explore how attitude toward knowledge sharing such as individual determinants

   effect on knowledge sharing intention in an EL system.
2. To discover how the subjective norms influence on knowledge sharing intention in an EL system.
3. To explore how the perceived behavioural control affects knowledge sharing intention in an EL system1.
4. To identify the individual determinants i.e. trust, perceived ease of use, perceived usefulness and educational compatibility that affect attitude toward knowledge sharing.
5. To determine the social environment determinants i.e. friends' influence, superiors 'influence, and self-efficacy, and facility conditions that affect knowledge sharing intention.

1.6   Research Hypotheses

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

H1. The students' attitude toward knowledge sharing has a positive effect on the intention to share knowledge in an EL system.

H2. Subjective norm has a positive effect on the intention to share knowledge in an EL system.

H3. Perceived behaviour control has a positive effect on the intention to share knowledge in an EL system.

H4. **The individual factors have a positive effect on the students' attitude towards sharing knowledge.**

H5. Trust has a positive effect on the students' attitude toward KS in an EL system.

H6. The perceived ease of use has a positive effect on the students' attitude toward KS in an EL system.

H7. The perceived usefulness has a positive effect on the students' attitude toward KS in an EL system.

H8. The educational compatibility has a positive effect on the students' attitude toward KS in an EL system.

H9: **The social environment factors have a positive influence on intention to share knowledge.**

H10. Friends' influence has a positive effect on the students' SN in and EL system.

H11. The superior's influence has a positive effect on the students' SN in EL system.

H12. Self-efficacy has a positive effect on the perceived behavioural control in an EL system.

H13. The facility conditions have a positive effect on the perceived behavioural control.

1.7   Overview of Open University Malaysia (OUM)

Open University Malaysia (OUM) was created on 10 August 2000 as Malaysia's seventh private university and was the first to operate through open and distance learning (ODL). It is owned by an association of the country's eleven government universities. Constructed on the philosophy that learning must be flexible and democratic, OUM has concentrated on constructing an affordable and accessible corridor to HEs, while placing emphasis on flexible admittance requests, a student-friendly HEs, and a blended form of instruction that mixes diverse styles of learning. Each of these features is planned to meet the different requirements of its students and is supported by a state-of-the-art ICT structure. As an ODL association, OUM directs HE courses through a blended pedagogical method that mixes virtual learning, traditional lectures and self-directed learning.

Virtual learning practices are planned in an on-line interface, frequently via OUM's learning management system (LMS) that is known as MyVLE. This feature is meant to expand the face-to-face communications among students and their teachers. The self-directed feature is intended to encourage students to finish the education procedure individually via print components and other learning courses in a variety of arrangements (Fadzil and Latifah, 2012). In 2010, OUM also introduced a new EL model (Fadzil and Latifah, 2010) that gives a major opportunity to EL as a way to enhance teaching and

learning to foster a culture of lifelong learning. In this new EL model, OUM has focused on improving the EL environment to create interfaces and multimedia that customize students' requirements and can maximise their learning experience and for continuous evaluation and more personalised content. OUM needs to determine just how this EL system, together with the corresponding materials and technology, is being perceived and used by its learners.

Therefore, this study chose OUM University as case study because firstly, EL management system (myLMS) which is inside established has extended inclusive recognition and acceptance between the local and international associations of HEs. Several of the local public academes institutions have bought and utilized myLMS. secondly, There are some asynchronous and synchronous features as interaction technologies in OUM's MyVLE method for involving students and teachers in an EL system that can transmission and communication of course materials among students everywhere and any time. Third, there are virtual classroom that creates a larger collaborative community where both totally online and blended learners from various learning centers are grouped together. Fourth, currently, myLMS is being utilized by more than 100,000students. MyLMS comprises of I-Tutorial, I-Radio and Learning Objects (LO) which are appropriate fine acknowledged by students. In November 2006, OUM acknowledged The Asia Pacific ICT Awards (APICTA), introduced by the Multimedia Development Corporation of Malaysia (MDC) for Finest of Learning and Teaching in EL method. At the same time, OUM is cooperating with the Ministry of Higher Education (MOHE) of the Kingdom of Saudi Arabia (KSA) to found a National EL Centre in Riyadh by myLMS as its EL system. MyLMS contain myCourse, myUniversity, myCommunity, and myMail. MyUniversity component has features such as user directory, task, learner online growth, calendar, personal address book, and polls. It assists as the first point of interaction among the university and the learner. Now, declarations are sent, university-wide polls are taken and individual calendars updated. As for the myCourse module, it includes features such as course summary, announcement, course content, support materials, references, staff info, course mate, forum, chat, quiz, digital drop-box, etc.(Anuwar Ali and Bahroom, 2008). Additionally, Currently, OUM has 61 Learning Centers nationwide. The Learning Centers are managed by a team of administrators. These centers are fully-equipped with tutorial rooms, computer laboratories, and library and Internet facilities.

1.8 Significant of the Study

The current research creates empirical and theoretical contributions. 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 behavioural mechanisms (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 (Kamarul, 2012; Oye *et al.,* 2011). Nevertheless, current, practical research indicates that the web is an intermediate instrument that encourages the quick construction of neighbouring connections that support the above period, and even promote involvement in the global geography.

As research into the requirement to provide and preserve connections relative to on-line KS develops, it is significant to explain the conclusions regarding the empirical approaches used. Thus, the purpose of this study was to extend a reliable and valid instrument for the easy evaluation, throughout the system development procedure, of the assessment of students' behaviour of the amount to which an EL system empowers them to establish and support relationships in that environment. The conclusions of the current research also provide important understandings for students to establish and support the interactions and to encourage KS behaviour in EL system. In sum, some mechanisms can facilitate and encourage KS behaviour by accomplishing the requirement of students to promote participation in an EL system.

Prior EL and KS research has concentrated on the influence of technical determinants on the adoption and continue behaviour of EL and KS, and a have rarely explored the classification of the determinants influencing the promotion and encouragement offered to students regarding participation in EL activities (Bibi Alajmi, 2008; Kamarul, 2012). The present research surveys the individual and social environmental determinants to encourage interactions and to predict KS behaviour accomplishment and students' willingness to help and contribute in an EL system.

This research focuses on the EL system's improvement by extending the best activities that support on-line KS among students by investigating the relationship between the independent variable of Determinants KSI and the dependent variable of the KS intention; a source was developed in an EL- system to examine the loss of KS between

students and on-line KS behaviour (Katunzi, 2011). A further aim is to supply the research results to EL system managers and the presidents of universities to explain the individual, social and environmental determinants which influence students' KS intention.

1.9   Operational Definitions

The current research supports improving understanding of two major subjects: knowledge sharing intention and e-learning systems. In this research, these concepts have a specific definition. Thus, the following interpretation of terms was used throughout the current research.

E-learning (EL)

Comprehension of EL can be recognized by use of computer and internet technology as it is based on electronic and learning technologies, such as computers, the internet-based materials and courses, school and broad area networks that can improve the learning process, and knowledge development and sharing in a learning environment (Qwaider, 2011). In this study, EL refers to learning through the learning systems based on a virtual environment that comprises a learning management system, a content management system, and other applications which are able to interact and facilitate the learning process between students and teachers in an academic program.

E-learning system

An EL system is fundamentally a network enabling the transmission of experiences, skill, and knowledge. An EL system manages all the learning process and materials that students and instructors require in learning process through standard applications (Yilmaz, 2012). In this study, 'EL system' refers to the EL applications that are used in Open University Malaysia (OUM) known by on-line facilitators and students as MyVLE.

Knowledge sharing (KS)

Numerous key features of the KS definition can be recognized. First, it refers to interactions between individuals. Second, the use of the term "on-line" implies a concentration on social interaction via on-line connections and/or on-line context. Third, it engages in the exchange of knowledge, that is, a knowledge that can be shared only via social interaction between individuals who truthfully recognize the exercise within a

definite background (Ma, 2009). KS in this research is associated with the transfer and exchange of knowledge, courses, and learning experiences among learners in the EL system. Determinantsof KSI also includes the motivations that improve and encourage KS in the learning procedure and environment.

Knowledge sharing Intention (KSI)

Intention is an indication of a person's readiness to perform a given behavior, and it is considered to be the immediate antecedent of behavior (Ajzen, 1991). Regarding the TPB the link between intentions and real behaviour are Determinants that express how inflexible individuals regarding willingness to demonstrate a behaviour. TPB claims that behavioural intention is a significantly powerful forecaster of behaviour; then, an individual performs the action they intended to perform (Pavlou and Fygenson, 2006; Chen *et al*., 2009). Intention to share in this research refers to students' readiness to share courses and experiences through an EL system.

Subjective Norm (SN)

Subjective norm is the perceived social pressure to engage or not to engage in a behavior(Ajzen, 1991). The main SN function is the individuals' perception, and that is created by social normative forces being the actual behaviour, or based on classmates', friends', teachers' and superiors' opinions, which are believed to produce a real behaviour (Ajzen and Fishbein, 1980). This research focuses on the perception of classmates as friend's influence and facilitators and lectures as superior'sinfluence that influences the sharing of knowledge intention in EL system.

Perceived Behavioural 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, and a technical support system as facility conditions, and self-efficacy in the use of an EL system.

Attitude towards knowledge sharing (AT)

Attitude toward a behavior is the degree to which performance of the behavior is positively or negatively valued (Ajzen, 1991). Hence, in accordance with previous studies, the attitude

towards KS includes values and behavioural beliefs (Bock *et al.,* 2005). It refers to the students' point of view and beliefs regarding KS.

Individual factors

Individual factors refer to personal factors such as Trust (Gefen and Straub, 2004; Cohen, Prusak, 2001; Fukuyama, 1995; Chiu et al., 2006) Perceived ease of use (Arbaugh, 2002; Karahanna, Straub and Chervany, 1999; Davis *et al.,* 1989) Perceived usefulness (Arbaugh and Duray, 2002) Educational compatibility (Almahamid and Abu Rub, 2011). Because knowledge sharing behavior is regarded as an individualistic behavior (Bock and Kim, 2002), it is important to understand how the individual attitudinal and behavioral intention may have a differential impact on students' knowledge sharing intentions.

Social environment factors

Environment refers to the factors that can affect a person's behavior. There are social and physical environments. Social environment include family members, friends and colleagues. Physical environment is the size of a room, the ambient temperature or the availability of certain foods. Environment and situation provide the framework for understanding behavior (Parraga, 1990). The major social environment factors are: Friend's influences (Lee, 2006; Chiu *et al.,* 2006), Superior's influences (Noe, 2010), Facility conditions (Chennamaneni, 2006; Hsu, 2008; Lehner and Haas, 2010; Song, 2009; Smuts et al., 2011), Self-efficacy (Lin *et al.,* 2009; Wasko and Faraj, 2005; Lin, 2007; Chen *et al.,* 2009).

Trust

Trust will be improved if there is KS intention in the on-line group (Keyes, 2008; Ridings *et al.,* 2002). Kankanhalli et al. (2005) treat trust as a contextual factor and posit that the degree of trust has an impact on collaborative efficiency in the organization. Trust is the "expectancy of individuals that their efforts will be reciprocated and not exploited by other individuals" (Hertel *et al.,* 2004). The importance of high level of trust between individuals in a society is that it means members are more willing to participate in an interactive environment (Nahapiet and Ghoshal, 1998). In this research, trust is defined as the reliance on the facilitators, teachers, and other students who want to share their knowledge and experiences in the EL system.

Educational Compatibility (EC)

Rogers (1995) demonstrated the compatibility equally "the degree to which the innovation is supposed as constant with the current values, former experiences, and desires of the probable adopter". In the current research, educational compatibility refers to how students' values and experiences adapt to the system features as well as students' continual enjoyment of learning the system.

Perceived Ease of Use (PEOU)

PEOU is viewed as the degree to which the person perceives that using the objective system will be easy psychologically and physically (Davis, 1993). In the current study, the PEOU is defined as the ease of sharing with others by sharing applications in the EL system.

Perceived Usefulness (PU)

PU is demonstrated as the amount to which a individual perceives that using the objective system will improve their effort performance (Davis, 1993). In this research, PU refers to improved learning performance, educational grades, and self-evaluation by KS in the EL system.

Self-Efficacy (SE)

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.

Facility Conditions (FC)

Thompson et al. (1991) utilized the facilitating conditions (FC) in their Model of PC Operation as the first definition of FC. FC is features that enable someone to achieve a goal with less effort: "Provision of support for users of PCs may be one type of facilitating condition that can influence system utilization" (Thompson *et al.,* 1991). The need to have access to computers and internet resources, a communication network, fast internet access, and technical support are among the facility conditions in this research.

1.10   Thesis structure

This study was designed based on five distinct chapters that complete the research process. Chapter one has investigated the key thoughts that are essential for each part of the study. The basic principles of this research clarified the most essential determinants that help to encourage and motivate the KS intention between students' in an EL system. The question is, "How can students be encouraged to use on-line KS behaviour in an EL system successfully through identifying and enhancing the Determinants of KSI?" The outline and the context of the problem and the purpose, the extent, and the importance of this research have been offered in Chapter One. In this chapter, the gaps in knowledge are shown, including the lack of sufficient research in this area, the existing high rate of drop out EL systems, and the significance of students' unwillingness to participate and share experiences and knowledge within an EL system.

Chapter 2 gives a short review of the many areas related to the study of KS intention in an EL system. Chapter Two is separated by the connotations of EL, EL systems, knowledge, and KS and its determinants, such as the individual and social environment determinants which influence the intention of KS between students in an EL system. Then, the suitable theoretical models, such as DTPB and SCT are argued. A theoretical exploration of the intention of persons to share knowledge is also discussed by offering a conceptual model underlying the study illustrating the link between Determinants, attitude towards KS, subjective norms (SN), PBC, and intention to KS that construct the foundation of the current study. Lastly, hypotheses regarding the planned conceptual model are considered.

Chapter Three displays a brief plan of the research methodology used to support this research. This study used a case study method with a mixture of surveys and interviews, that is, a mixture of both quantitative and qualitative research methods. A review approach was utilized to validate the variables (determinants) that supported the KS intention in the EL system. An interview approach was used with the applicants from the case study as a supplementary method to confirm the conclusions from the survey approach about the Determinants that can have particular influence on the KS intention in the EL environment. The research method of this study includes elements such as discussion of the study design, data collection, instrumentation or measures, analysis of data, and validity and reliability.

Chapter 4 indicates the findings of the data analysis; these comprise the reporting of the results, discussion of the research results, and the testing of the study questions and hypotheses. Since the study applied a mixture of approaches for data collection (online questionnaire and interview), data analysis focused on both qualitative and quantitative features. The major analysis of quantitative data was made using the structural equation modelling (SEM) method. In this research, the investigator utilized LISREL and SPSS programs to assess the data from the online questionnaire (survey). LISREL was applied to analyse the measurement model and investigate the relations among concealed variables. In the Chapter Four, thirteen hypotheses are tested and analysed. The summary of the survey results is given in this chapter. Chapter Five answers the RQ and the RO agreed in first chapter using the relevant inferences developed from the research's conclusions offered in Chapter Four. It also points out the likely contribution to knowledge, research consequences, study restrictions, recommendations arising from the current study for online based learning institutions and EL systems, and suggestions for future study.
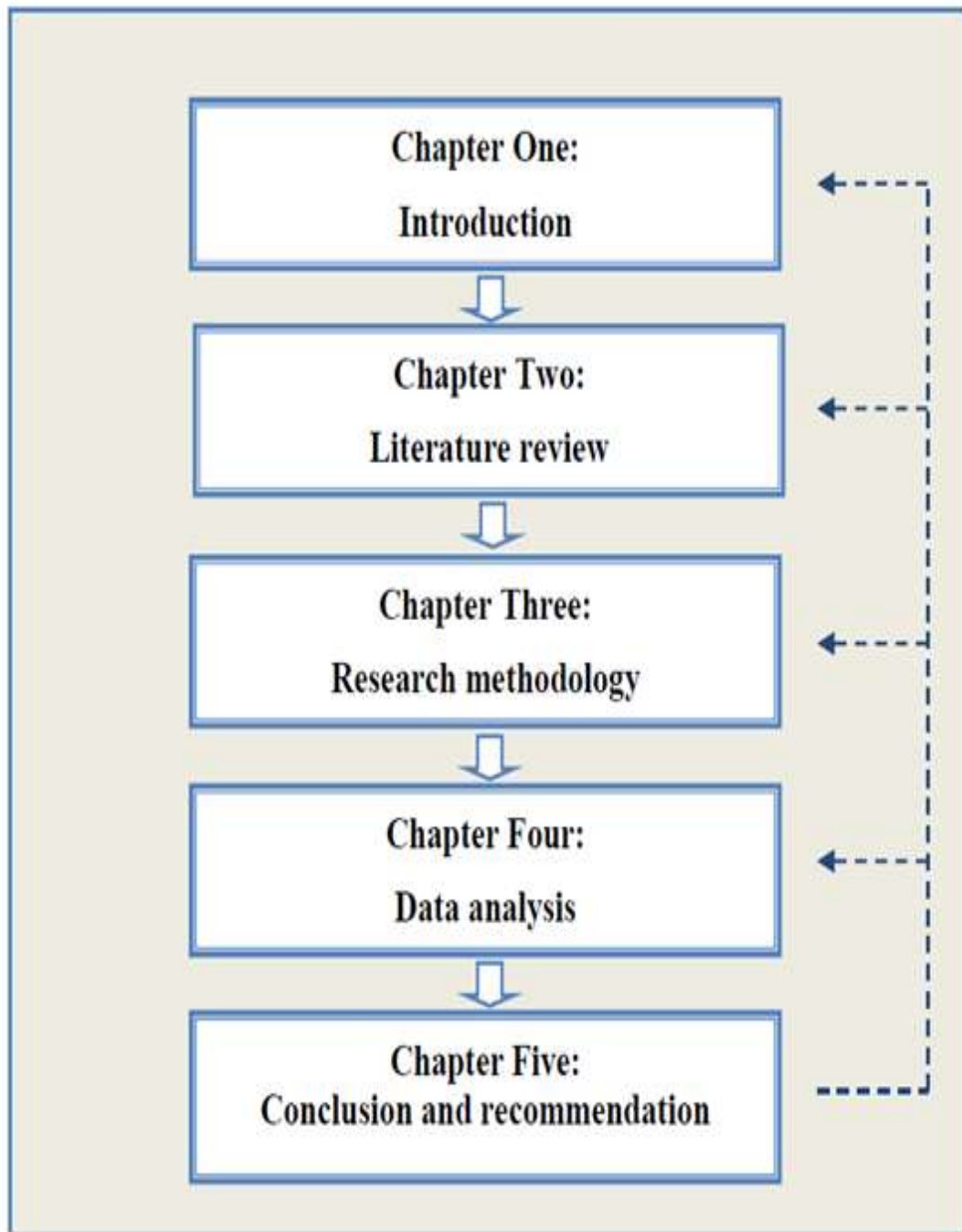
Figure 1.2 :Organization of Thesis

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