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**THE INFLUENCE OF COLLABORATIVE LEARNING STYLE,
RECIPROCITY AND EXTROVERSION ON KNOWLEDGE SHARING VIA
SOCIAL MEDIA AMONG UUM UNDERGRADUATES**



By
NG SHU KAE

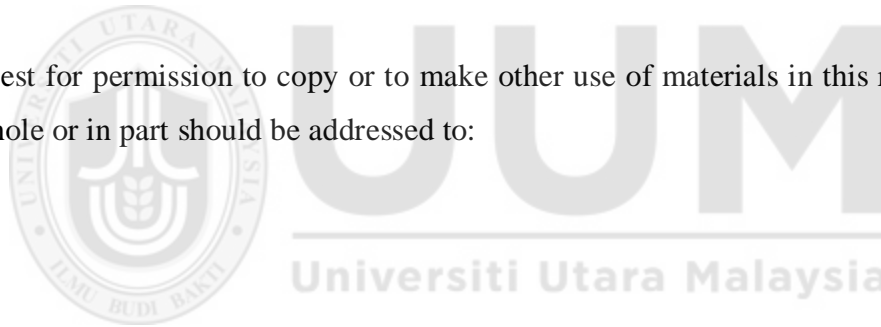
UUM
Universiti Utara Malaysia

**Thesis Submitted to
School of Business Management
Universiti Utara Malaysia
in Partial Fulfillment of Requirement for Master of Science
(Management)**

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ABSTRACT

This quantitative study is aimed to study the relationship between collaborative learning style, reciprocity and extroversion on knowledge sharing via social media in Universiti Utara Malaysia (UUM). A total of 400 set of questionnaires were distributed to undergraduate students from three (3) academic colleges which are College of Business (COB), College of Arts and Sciences (CAS) and College of Law, Government and International Studies (COLGIS). However, only 363 set of questionnaires were return and usable for analysis. Regression analysis was performed to tests the hypotheses of the study. The result indicated that collaborative learning, reciprocity and extroversion were positively significant to knowledge sharing behavior via social media. The findings were discussed and recommendations for the future research were also addressed.

Keywords: Knowledge sharing, collaborative learning style, reciprocity, extroversion.



ABSTRAK

Kajian kuantitatif ini bertujuan untuk mengkaji hubungan antara gaya pembelajaran kolaboratif, salingan dan extroversion kepada perkongsian pengetahuan melalui media sosial di Universiti Utara Malaysia (UUM). Sebanyak 400 set soal selidik telah diedarkan kepada pelajar-pelajar sarjana muda dari tiga (3) kolej akademik iaitu Kolej Perniagaan (COB), Kolej Sastera dan Sains (CAS) dan Kolej Undang-undang, Kerajaan dan Pengajian Antarabangsa (COLGIS). Walau bagaimanapun, hanya 363 set soal selidik kembali dan boleh digunakan untuk analisis. analisis regresi yang dilakukan untuk menguji hipotesis kajian. Hasilnya menunjukkan bahawa pembelajaran kolaboratif, timbal balik dan extroversion adalah positif signifikan kepada gelagat perkongsian ilmu melalui media sosial. Hasil kajian tersebut telah dibincangkan dan cadangan diberi untuk kajian akan datang.

Katakunci: Pengkongsian pengetahuan, gaya pembelajaran kolaboratif, salingan, extroversion.



UUM
Universiti Utara Malaysia

ACKNOWLEDGEMENT

Without the dedication from these people, the completion of this research paper would not have been possible. I would like to thank Ministry of Higher Education and MyBrain for sponsoring my study.

I am deeply grateful to Dr. Chong Yen Wan, my supervisor, for giving me invaluable support throughout my candidature. Without her guidance and professional support, I would not be where I am today. I would like to thank my beloved parents, Ng Ban Aun and Shum Koi Len for all your patience, financial and mentally support to me until the end of this journey.

I also would like to thank my postgraduate friends Nur Syazwani Binti Suhaimi, Norbaizura Binti Ramzi and Chong Wen Jun for providing me with many discussions, constructive comments and suggestions in completing this research paper.

Finally, I mostly want to express my gratitude to all respondents from undergraduate students from College of Business (COB), College of Arts and Sciences (CAS) and College of Law, Government and International Studies (COLGIS) for take part in this study. Without their sincere participations, this study will not be as successful as today.

TABLE OF CONTENTS

Permission To Use	i
Abstract	ii
Abstrak	iii
Acknowledgement	iv
Table of Contents	v
List of Tables	viii
List of Figure	ix
Ligure of Abbreviations	x
List of Appendices	xi
CHAPTER ONE INTRODUCTION	1
1.1 Background of the Study	1
1.2 Problem Statement	6
1.3 Research Question	7
1.4 Research Objective	7
1.5 Scope of Study	8
1.6 Significant of Study	8
1.7 Definitions of Key Terms	10
1.7.1 Knowledge sharing	10
1.7.2 Collaborative Learning style	10
1.7.3 Reciprocity	10
1.7.4 Extroversion	11
1.8 Organization of the Chapter	11
CHAPTER TWO LTERATURE REVIEW	12
2.1 Introduction	12
2.2 Knowledge and Knowledge Management	12
2.3 Knowledge Sharing	14
2.4 The Social Media Revolution	20

2.5 Social Media and Knowledge Sharing	21
2.6 Collaborative Learning style and Knowledge Sharing	22
2.7 Reciprocity and Knowledge Sharing	24
2.8 Extroversion and Knowledge Sharing	25
2.9 Other Factors Influences Knowledge Sharing	26
2.10 Selection of Factors Influence Knowledge Sharing	28
2.11 Definition of Variables	29
2.11.1 Knowledge Sharing	29
2.11.2 Collaborative Learning style	29
2.11.3 Reciprocity	30
2.11.4 Extroversion	31
CHAPTER THREE : METHODOLOGY	32
3.1 Introduction	32
3.2 Research Model/Framework	32
3.3 Hypothesis Development	34
3.4 Research Design	34
3.4.1 Validation of Instruments	35
3.4.2 Sample & Sampling Technique	36
3.4.3 Validation of Instruments	37
3.4.4 Pilot Test	39
3.5 Operational Definition	40
3.5.1 Knowledge Sharing Behavior	40
3.5.2 Collaborative Learning Style	40
3.5.3 Reciprocity	40
3.5.4 Extroversion	41
3.6 Measurement of Variables	42
3.7 Data Collection and Administration	43
3.7.1 Type of Study	43
3.7.2 Sources of Data	44
3.7.3 Unit of Analysis	44
3.8 Data Analysis Techniques	45
CHAPTER FOUR :RESULT AND DISCUSSION	46
4.1 Introduction	46

4.2 Response Rate	46
4.3 Data Screening	47
4.3.1 Missing Data	47
4.4 Background of Respondent	48
4.5 Reliability and Normality Analysis	51
4.5.1 Realibility Analysis	51
4.5.2 Normality Analysis	52
4.6 The Analysis of Mean Scores	54
4.7 T-test Analysis	55
4.8 Analysis of Variance (ANOVA)	55
4.9 Correlation Analysis	61
4.10 Regression Analysis	63
4.11 Summary of Chapter	65
CHAPTER FIVE CONCLUSION	66
5.1 Introduction	66
5.2 Overview of the Finding	66
5.2.1 Collaborative learning style and knowledge sharing	67
5.2.2 Reciprocity and knowledge sharing	68
5.2.3 Extroversion and knowledge sharing	68
5.3 Implication	70
5.4 Limitation of the Study	70
5.5 Recommendation of the study	72
5.6 Conclusion	72
References	73
Appendix A	90
Appendix B	92
Appendix C	105

LIST OF TABLES

Table 3.1 Total Undergraduates in UUM	36
Table 3.2 Sample size	37
Table 3.3 Items for questionnaire	38
Table 3.4 The Cronbach's Alpha from the Pilot Study (n=50)	39
Table 4.1 Respondent's response rate	47
Table 4.2 Demographic of respondent	50
Table 4.3 Reliability Statistic	51
Table 4.4 Normality Test of the Variables	53
Table 4.5 Statistical scores for all Variables	54
Table 4.6 ANOVA Test Result for College	56
Table 4.7 ANOVA Test Result for Religion	56
Table 4.8 Homogeneity Test for Race Groups	59
Table 4.9 Correlation of variables	62
Table 4.10 Regression Analysis	63
Table 4.11 Coefficient of Regression	64
Table 4.12 Summary of Hypotheses Testing Results	64

LIST OF FIGURE

Figure 2.1 SECI Model (Nanoka & Takeuchi, 1995)	15
Figure 3.1 Research Framework	33



List of Abbreviations

UUM	Universiti Utara Malaysia
COB	College of Business
CAS	College of Arts and Sciences
COLGIS	College of Law, Government and International Studies
KM	Knowledge Management
KS	Knowledge sharing
KSB	Knowledge Sharing Behavior
CLS	Collaborative learning style
REC	Reciprocity
EXT	Extroversion
GEN Y	Generation Young

List of Appendices

Appendix A Letter of Application to Collect Data

Appendix B Questionnaire

Appendix C SPSS Results



CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

In today economy, physical or tangible assets no longer measure an organization's strength or success. Experiences and insights in other words called knowledge are not housed in the 'organization' but knowledge lives in the people. Knowledge is something subjective that majority of people know and every individual have different kind of knowledge. However, organization gathered the knowledge either from the internal (within organization) and external (outside organization) sources for years. Organizations had been struggled with the knowledge and skills that they have to stay competitiveness in the market or industry. According to World Economic (2016), businesses today had gone through three different stages of industrial revolution which are mechanical production, mass production and automated production

Organizations started to realize that there is a huge undiscovered asset in the organization, which called knowledge. Knowledge becomes one of the most powerful assets in any organizations or enterprise, but very few are adopting and managing it. The problem is that most people don't know who has what information, or how to connect the dots and enable the knowledge to flow through into organizations or enterprises.

Knowledge has been accepted as the key differentiator in any organization for them to sustain or stay competitiveness (Halawi, Aronson, & McCarthy, 2005) which reflect their organization performance. Some researchers argued that knowledge much depends on individual and organizational competencies like skills, know-how, and know-what (Davenport & Prusak, 2000; Nonaka & Takeuchi, 1995).

Nowadays, knowledge management (KM) are associate with knowledge sharing (Al-Alawi, Al-Marzooqi, & Mohammed, 2007). Despite that, organization in public sector gain effectiveness and efficiency through process of knowledge sharing among knowledge workers. Effective knowledge management occurs in organization whereby employees or subordinates are eager to share their knowledge with their counterpart or colleagues (Amanyah, 2013).

Knowledge can be share through communication into different variety forms like face to face, email, video conferencing, and others. Furthermore, knowledge also can be shared in a variety medium lecture hall, conferences, training, seminar & others. Knowledge sharing is play a vital role in knowledge management where it can enhance core competencies of the organization. The process of knowledge sharing and nature of knowledge had been studied in organizations (Ipe, 2003). The nature of knowledge is located in the human mind, however the behaviour of knowledge sharing affects organizing innovative ability and development ability. (Lin, Ye, & Bi, 2014).

In addition, knowledge can be shared not only by publishing a book, writing an article or journal from educators. Moreover, knowledge also can be shared in variety of platform or tools. For example, knowledge can be shared in social media where social media can reach more people in the world without having any boundaries of location, time, and place. Social media is a platform that enables online exchange of information through formal or informal conversation and interaction. Furthermore, social media can easily gather the knowledge or information from previous conversation or interaction in the online setting by using smart phone. For example, wikis are a form of social media where co-authors eager to share their knowledge in the form of textual and visual websites. Google Docs manages documents like spread sheets, survey questionnaires, agenda meeting, even business plan. All the files can be store in cloud storage system, where it can easily upload, store and share important documents or related information or knowledge for different purposes.

Youtube and Flickr use create social interaction among others with video and photo sharing. Facebook or blog use to create conversation or information sharing towards latest news to reach out to more audiences especially younger generations. Social media strengthens and supporting network events or activities which gather different expertise from different industry with the common interest or background.

Furthermore, social media play a vital role for everyone including undergraduate student to seek latest news, information even knowledge to upgrade themselves or find solutions to solve their problems before seeking help from others. Undergraduate

students are in the generation young categories where they engaged into digital world and often use social media to share ideas, personal experiences or knowledge publicly.

In addition, social media play an important role in business world today. Through social media, employees in the organization are finding ways of intergrading social media into their business processes like gather information, increase range and richness of their network with others (Gaal et al, 2014).

Social media had been use by many people especially generation young (Gen-Y) which is undergraduate students in University. Generation young are the first generation born who spend their entire lives in the digital environment, information technology (Bennett et al., 2008; Wesner and Miller, 2008).

In contrast, there are many factors influence Gen-Y use social media which are environment factors which included economic, technological, cultural and political/legal variables among intra generational. Despite that, individual factors become another factors influence Gen-Y use of social media. Individual factors consist of socio-economic status, personal values or preferences, age and lifecycles stage. Dynamic factors which are goals, emotion and social norms do influence Gen-Y use of social media (Bolton et al., 2013).

Gen-Y is the generation who technologically savvy, better learners, more open to change and efficient multi-tasking (NAS, 2006). Social media increase the connectivity within and across an organization through informal conversation or discussion that

eliminated the barriers among employers and employees or even lecturers and students in University.

Undergraduate students found that most of them are communicated administrative type posts, critical engagement or discussion, interaction between teachers and students in Facebook (Rambe, 2012). Nowadays, students feel less interested in traditional face to face communication and turn to the cyberspace like social media as an alternative communication channel. Furthermore, communication via social media can closer the gaps between professional and students in the informal teaching and learning environment.

In this study, researcher had identify three factors that influence knowledge sharing of undergraduate students via social media which are collaborative learning style, reciprocity and extroversion.

1.2 Problem Statement

In the information age, the amounts of knowledge available increased rapidly than ever. It is necessary to address the issues of how both educators or academician and students manage this information or knowledge in other formats that make students, faculties or administrators more informed or knowledgeable. According to Christine Tan (2011) argue that data collected from yesterday will become information today. Then, the information today will become knowledge for tomorrow. In general, knowledge are generated or gathered from the important information extract from the raw facts.

One of the critical issues facing by many organization including government, commercial and education institutional in the global networked economy today is how to extract knowledge and shared within organizations. Moreover, organizations today are also facing issues on how to find, train and retrain knowledge workers to meet the demand of customers or clients. Organizations today will not be able to sustain the level of growth and innovation that are required to be successful without addressing these issues. Lack of knowledge sharing is one of the most important problems in knowledge management area (Shafieioun & Safaei, 2013). This is the main reason why organizations must organize and share their knowledge among them.

A study done by Lewis and West (2009) on teenagers and college students are checking social network profiles and update daily. However, there is some problem knowledge sharing via social media face by undergraduate students. Distractions and abundance of information from the social media will affect knowledge sharing among students with lectures (Yeo, 2014).

Therefore, the objective of this research is to establish a deep understanding of the behavior of students manage to share their knowledge among peers via social media. Collaborative learning style, reciprocity and extroversion are the three key factors influence students' knowledge sharing via social media in UUM.

1.3 Research Question

Based on this study, the research questions have been identified as below:

- a) Is there any significant relationship between collaborative learning style and knowledge sharing via social media?
- b) Is there any significant relationship between reciprocity and knowledge sharing via social media?
- c) Is there any significant relationship between extroversion and knowledge sharing via social media?

1.4 Research Objective

The aims of this research as below:

- a) To examine the relationship between collaborative learning style and knowledge sharing among UUM students via social media.
- b) To examine the relationship between reciprocity and knowledge sharing among UUM students via social media.
- c) To examine the relationship between extroversion and knowledge sharing among UUM students via social media.

1.5 Scope of Study

The main focus in this study is to examine factors that influence knowledge sharing among undergraduate UUM via social media. Three independent variables were tested in this study namely, collaborative learning styles, reciprocity, and extroversion. The study involves all undergraduate students from three different colleges which are College of Business (COB), College of Arts and Sciences (CAS) and College of Government, Law and International Studies (COLGIS).

1.6 Significant of Study

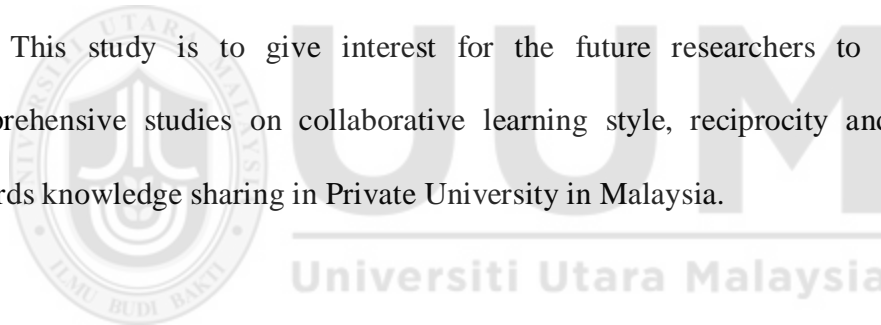
The findings of this study have made a significant contribution toward body of knowledge in education institutions. From a theoretical perspective, this study extends and enriches our understanding of knowledge sharing in education perspective and context. This study directly contributes to the body of knowledge sharing and knowledge management especially to the students, academicians and higher learning institutions.

For the students, the study enables them to obtain more knowledge on how knowledge sharing practice would help students to enhance their performance in communication, relationship, collaboration and develop emotional intelligent (EI) when they are involved in group activities. According Walkers (2002) mention that, past research provide much evidence on knowledge sharing during collaborative learning result reflection and learning that improve the level of competencies.

Besides that, for the academicians, this study allows the lecturers to reconsider their teaching approach and put more emphasis on collaborative learning to variety their teaching methods. Therefore, with knowledge sharing activities, the teaching process is more feasible, easier and effective.

Moreover, the research will enable the university to contribute towards development of new knowledge in terms of theory and practice in knowledge sharing and behavior of students and lecturers. Through knowledge sharing, become the main driving force for universities to produce high quality graduates for the job market (Ahmad, 2003).

This study is to give interest for the future researchers to develop more comprehensive studies on collaborative learning style, reciprocity and extroversion towards knowledge sharing in Private University in Malaysia.



1.7 Definitions of Key Terms

There are some similar key terms used in this study. The definitions of terms used in the study were based on the previous researches conducted.

1.7.1 Knowledge sharing

Knowledge sharing is referring to everyone to share what they know. Several authors have prescribe knowledge sharing is the process of involving exchange of information or knowledge or assistance between individually or from groups of people in any organization (Connelly & Kelloway, 2003; Davenport & Prusak, 1998).

1.7.2 Collaborative Learning style

Collaborative learning style requiring active knowledge sharing in team projects, group presentations, participation in face-to-face and online discussions, and collective problem solving (Robson et al, 2003; Rafaeli & Ravid, 2003).

1.7.3 Reciprocity

Reciprocity is a behavioral response to anticipate kindness and unkindness, whereby both parties comprise are win-win situation. In addition, reciprocity relay on individuals foresee knowledge sharing is important for reaching a mutual goal in order

to be willing and eager to share (De Vries, R. E., Van Den Hooff, B., & De Ridder, J. A., 2006).

1.7.4 Extroversion

According to Majid and Wey (2009), students' personality and habits are established from their daily activities in college and university. Personality of an individual is depends on their behaviour and habit from their daily activities.

1.8 Organization of the Chapter

This report contains of five chapters. The first chapter gives the background of study, the problem under investigation, the purpose and significance of study, the scope, the research questions and research objectives. In chapter two review of literature related on knowledge sharing. Chapter three emphasizes on the methodology which explained the measurement of variables, identify sample size in this study, research instrument used, scale of measurement, data collection method and statistical testing and analysis. The results of the analysis are discussed in chapter four. Finally, chapter five provides the discussion of the results as well as suggestion and recommendation for future research.

CHAPTER TWO

LITETATURE REVIEW

2.1 Introduction

This chapter explores the literature from past studies on knowledge sharing, collaborative learning style, reciprocity, and extroversion. This chapter will discuss the approaches and areas of study from the previous study. This chapter emphasize on the theoretical development of a conceptual model in measuring collaborative learning style, reciprocity and extroversion toward student's knowledge sharing via social media like Facebook, Whatapps and others.

2.2 Knowledge and Knowledge Management

In competitive era, knowledge becomes core weapon and critical element for survival of organizations. In addition, knowledge also defines as the most valuable assets to the organization (Drucker, 1993). In order to stay competitiveness, organization heavily depends on knowledge as a resource and critical success factor for the organization. (Grant, 1996; Nahapiet & Ghoshal, 1998; Yi, 2009). Furthermore, knowledge is considered as the information process that involve with an individual, team, and organization performance (Wang and Noe, 2010). According to Davenport,

Long and Beers (1998), knowledge is a high value form of information that is ready to put into execution.

Two types of knowledge identify by Nonaka & Takeuchi (1995) are tacit knowledge and explicit knowledge. Tacit knowledge refers to knowledge that is available from individual past experiences or internal knowledge where hard to formalize and unable to convert into information to share with others (Crawfords, 2005). Therefore, tacit knowledge is difficult to be shared or transfer from one to another (Bartol & Srivastava, 2002). In contrast, the knowledge can be easily articulated, summarize and stored in media, digital or documented are called explicit knowledge (Al-Alawi, Al-Marzooqi, & Mohammed, 2007; Rai, 2011; Gao, Li, and Clarke, 2008).

Knowledge management (KM) is the process of gathering, storing, sharing, using, identifying, organizing and managing knowledge resources that include tacit and explicit knowledge to remain competitive and to achieve organizational goals (Al-Hawamdeh 2003, Nicholas 2004, Davenport & Prusak, 1998). There are five element of KM which consists of knowledge capture, knowledge creation, knowledge use, knowledge sharing and knowledge retention (Al Hawamdeh, 2003). In addition, knowledge management (KM) is an integrated knowledge system, where organization can effectively utilise the knowledge to enhance performances or achievement (Halim, 2001)

2.3 Knowledge Sharing

A previous study found that knowledge sharing was one of the main reasons for instituting Knowledge Management in Malaysia organizations (Chong, 2013). Knowledge sharing is one of the most significant aspects in the process of making the right knowledge to the right person and right timing as the initiative of knowledge management (Frost, 2013). In addition, knowledge sharing is an activity involved transferring either explicit or implicit knowledge among individuals, groups or organizations to another (Lee, 2001). A study had done by Intermediaur (2012), indicate that 73% of people are eager to share their knowledge inside the organization.

Furthermore, Amayah & Nelson (2010) argue that there are two types of knowledge sharing which are practical knowledge and book knowledge. Practical knowledge explains on how knowledge can be shared to accomplish a task more efficiently, while book knowledge refers to knowledge to be shared on technical job.

Nonaka & Takeuchi (1995) had developed the SECI model (Socialization, Externalization, Combination and Internalization). In this model will explain the differences between tacit knowledge and explicit knowledge can be shared or transferred in four different ways as below:

1. Tacit Knowledge to Tacit Knowledge (Socialization)
2. Tacit Knowledge to Explicit Knowledge (Externalization)

3. Explicit Knowledge to Explicit Knowledge (Combination)
4. Explicit Knowledge to Tacit Knowledge (Internalization)

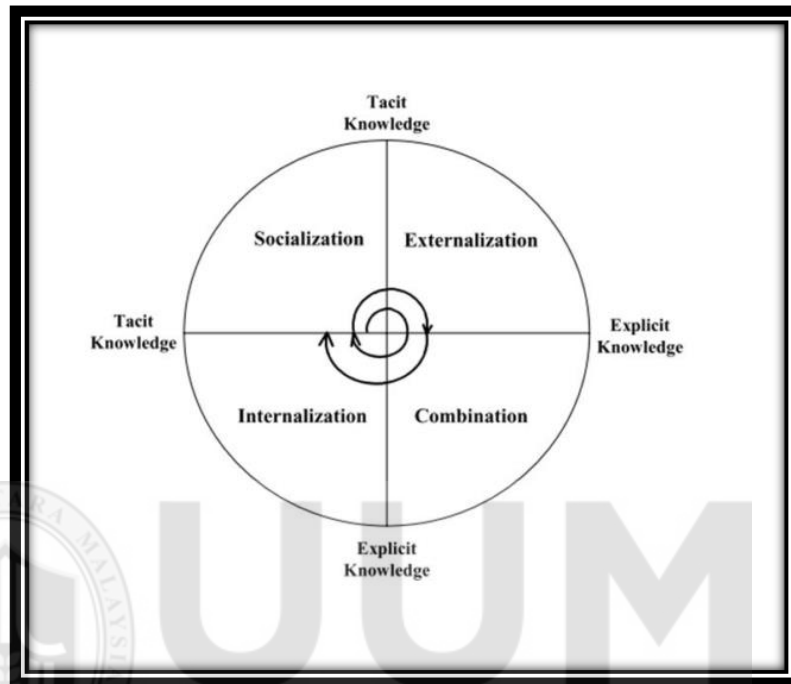


Figure 2.1

SECI Model (Nonaka & Takeuchi, 1995)

According to SECI model, socialization is the process of sharing experiences (tacit knowledge to tacit knowledge) through face to face interaction like meeting and brainstorm activities. Tacit knowledge is hard to be shared formally. Therefore, it can only be acquire by hands on experience as compare rather than written document like manuals or textbook (Nonaka & Takeuchi, 1995).

Furthermore, externalization is the process of articulating tacit knowledge into explicit or document forms. In this process, the new knowledge to be created such as concept and know how. However, internalization is the process of compress explicit knowledge into tacit knowledge which means that new knowledge is learned by doing. For example, the theory from the scholar that can be used or apply in daily activities.

According to Ipe (2003) who stated that knowledge sharing is activities of swapping knowledge between individuals and groups. In addition, knowledge sharing is a set of behaviors that involve process of exchange information to other (Gao, 2004). There is difference between knowledge sharing and information sharing. Information sharing is coming from management to the employees, however, knowledge sharing is come from employees to management.

In addition, knowledge sharing defines as the process of distribute knowledge throughout the organization (Alavi and Leidner, 2001). The diffusion can happen between individuals, groups, or organizations using any communication medium. There is no standard definition on knowledge sharing after review many article. Knowledge sharing is the process of mutually exchanging knowledge and jointly creating new knowledge (Hooff, B. Van Den, & Ridder, J. a. De., 2004).

There are two dimensions of knowledge sharing processes which are knowledge donation and knowledge collecting (Hoof and Wenen, 2004). Knowledge donation is refer to the process where employees communicating their personal intellectual capitals

to others. Thus, when employees share their knowledge with others is the process of knowledge donating (Hoof and Wenen, 2004). In contrast, knowledge collecting is referring to process where employees encourage colleagues to share their intellectual capital. Knowledge collecting takes place when employees discover their knowledge with others in the organization. In directly, knowledge collecting has a significant influence on all types of innovation strategies in an organization (Kamasak & Bulutlar, 2010).

However, another study had done by Bakhuisen (2012) indicates that knowledge sharing divided into three dimensions. The first dimension called transaction memory which refers where the knowledge come from. The second dimension is people which refer to whom to share the knowledge with either strong or weak ties. The three dimension is content which refer to sort of knowledge to be shared either explicit knowledge or implicit knowledge.

Knowledge sharing can be divided into two forms. First, existing knowledge can be managed which consist of establishing of knowledge repositories (memos, reports, articles, etc.), knowledge compilation, and others. Secondly, knowledge-specific can be managed through some activities like knowledge acquisitions, creation, distribution, communication, sharing, and application (Setiarso, 2006). Knowledge sharing can be occur between individuals mutually exchange implicit and explicit knowledge (Lin, 2007). In particular, knowledge sharing acts as the most important process for knowledge management (Bock & Kim, 2002).

Knowledge sharing is the fundamental means through where individuals are able to restructure and readapt knowledge in multiple perspective and to challenge one's understanding while taking into account peers' perspectives (Ghadirian, Ayub, Silong, Bakar, & Zadeh, 2014). Empirical study has determine the important factors that influence knowledge sharing are individual factors, organizational factors, technological factors(Riege, 2005).

According to Bellefroid (2012) who mention that knowledge sharing has three generations. The first generation where knowledge sharing in the concept of codification and storage in traditional way which supported by information technologies. The second generation of knowledge sharing more focus on social context, where individual like to engage or cooperate with one another. The third generation knowledge sharing more emphasizes on social network that enables get in touch with experts and less physical contact with others.

Additionally, Ford (2004) categorized a numerous of operationalization for the construct knowledge sharing reviewing the organizational literature. Based on this operationalization, we considered whether authors measured intentional or actual knowledge sharing behavior. Some studies have further explored the knowledge sharing into two dimensions, which are knowledge collecting and knowledge donating (Kim & Lee, 2013).

From the conceptual perspective point of view, there are many approaches of knowledge sharing. Knowledge sharing occurs between individuals, whereby knowledge is transformed into a form easily understood and ready to use by others.

There are several research done on knowledge sharing behavior. One of the research had examine the direct relationship between self-worth, attitudes, perceived organizational incentives and management support on knowledge sharing behavior (Ain Zuraini, 2014).

Scholars have defined knowledge sharing behavior as the process of involving knowledge disseminate or information exchange between individuals and groups of people (Connelly & Kelloway, 2003; Davenport & Prusak, 1998). Furthermore, Yuen and Majid (2007) examine seven areas of knowledge sharing behaviors of undergraduates in Singapore public universities. In the research reported, students frequently shared knowledge when working in groups but less frequent between groups. Most of the previous studies on knowledge sharing have been undertaken in corporate settings, however, knowledge sharing in students context are less been explored.

2.4 The Social Media Revolution

In 1997, the first recognized social network site (SNS) called SixDegrees.com. The definition of social network site (SNS) is an online platform that connects with people who share similar interest, hobbies and others. Social network sites (SNS) are widely attracted attention from academic and industry researchers to investigate human behavior. Social media is a 21st century broadly used by people especially generation young (Gen-Y) as medium for communication, collaboration, and creative expression, and often interchangeable with the term Web 2.0 (Boyd & Ellison, 2012).

According Brosdhal and Carpenter (2011) categorise four different of generations based on the dates of birth for each categories. The first generation called Silent generation who were born between 1925-1945. The second generation called Baby Boomers who were born between 1946-1960. The third generation called Generation X who were born from 1961-1981. The fourth generation is called Generation Y who born between 1981-1999. The fifth generation called generation Z or millennial which born after 2000 onward.

2.5 Social Media and Knowledge Sharing

There are several studies done on knowledge sharing and social media. According to Paroutis and Saleh (2009) who studied the key determinants of knowledge sharing and collaboration using web 2.0 technology in multinational organization. In addition, the used of social media increased rapidly from the year of 2007 until 2010 by undergraduate students (Smith and Caruso, 2010). Social media engaging students in collaborative group projects that supported knowledge sharing and creation (Hazari, North & Moreland, 2009). Sharing experiences or expertise in certain field in social media is similar like sharing tacit knowledge.

In the knowledge economy, every individual expose different kind of knowledge based on different self-interest. Therefore, organizations have different variety of knowledge intensity from different employees' background, subordinates, managers, stake holders and others. Furthermore, knowledge sharing is the main key of creating new knowledge or idea to enhance innovation, productivity and efficiency to bring organizational into another level.

Knowledge and skills are what students learn not only in classroom setting, but also from others students' experiences through sharing in social media like facebook and whatapps. To improve knowledge sharing among the undergraduates not only benefit among themselves but also the society. Undergraduates will become leader in the future.

Therefore, knowledge should be sharing not only related with academic setting but knowledge to solve problems, resolve conflicts and others.

2.6 Collaborative Learning Style and Knowledge Sharing

There are several studied reveal that collaborative learning involves active knowledge sharing to students which can get greater academic performances, enhanced socialise skills and interpersonal skills (Majid & Chitra, 2013). Collaborative learning involving volunteer knowledge sharing, bring many benefits to students like brainstorming to get opposing ideas and viewpoints, positive inter-dependence and sense of satisfaction for contributing towards learning of others (So & Brush, 2008; Burns, Pierson & Reddy, 2014; Leinonen & Durall, 2014). Furthermore, academicians can promote knowledge sharing by encouraging more on collaborative learning among them (Wei, Choy, Chew & Yen, 2012).

Several studies have highlighted knowledge and information sharing play important role in learning and personal development (Robson et al, 2003; Rafaeli & Ravid, 2003). Basically, researchers are more interested to study about learning styles towards academic achievement (Abidin, Rezaee, Abdullah, & Singh, 2011). Furthermore, there are some study towards personality, knowledge sharing and work performance in organization (Furnham, Jackson, & Miller, 1999). For instance, learning style also can be influence knowledge sharing behaviors (Graf, Kinshuk, & Liu, 2008). However, Nazrin Izwan B. Mohd Noh (2013) indicate that knowledge sharing attitude is

the most influencing factor which affect knowledge sharing among academic staff in organization.

The Grasha Riechmann Students' Learning Style Scales (GRSLSS) scale was used in this study which developed by Grasha and Riechmann (1989). There are six dimensions in GRLSS which are dependent style, independent style, cooperative style, collaborative style, contributive style, and competitive style. However, collaborative learning style was selected in this study.

Collaborative learning style is more preferable for students which they enjoy to work in a group or team to sharing their same goals to accomplish within a period of time. In addition, collaborative learning is reducing the competition among students where the students are more willing to share their ideas and knowledge more frequently (Yuen and Majid, 2007).

Therefore, this study will conduct to investigate the relationship between collaborative learning style and knowledge sharing toward undergraduate UUM via social media.

2.7 Reciprocity and Knowledge Sharing

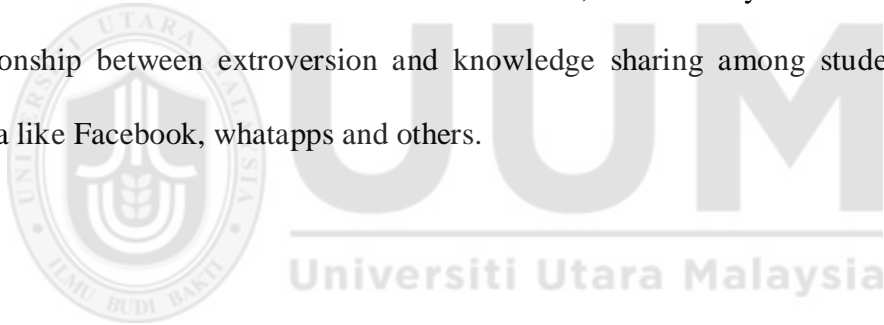
Reciprocity plays an important factor to influence knowledge sharing. Reciprocity is a behavioral response to anticipate kindness and unkindness, whereby both parties comprise are win win situation. From the knowledge sharing perspective, reciprocity is a fair mutual knowledge exchange behavior; a reciprocal relationship is the degree to which an individual believes that to improve mutual relationships with others through knowledge sharing.

According to Falk and Fischbacher (2006) reciprocity has positively influence on attitudes toward knowledge sharing behavior in online setting. In addition, Furthermore, Cyr & Choo (2010) also highlighted that reciprocity together with trust promotes knowledge sharing.

Furthermore, Wasko and Faraj (2005) who have found a positive effect between reciprocity and knowledge sharing in the online network environment. Therefore, this study will to examine the relationship between reciprocity and knowledge sharing among students via social media like Facebook, whatapps and others.

2.8 Extroversion and Knowledge Sharing

According to Jadin & Batinic (2013), some scholars believe that personality traits are a key determine of human behaviour. Therefore, personality traits have the potential to influence individual's knowledge sharing behaviour. Furthermore, personality traits had been studied empirically in different countries context like in the west (Matzler et. Al, 2008; Gupta, 2008, Raducanu, 2012), Asia (Teh et.al; 2011) and few being conducted in Africa (Van & Rothman; 2004, Van & Leung; 2001). According to Chong, Teh and Tan (2014) who found a positive relationship between knowledge sharing with extroversion and conscientiousness. Therefore, this study will investigate the relationship between extroversion and knowledge sharing among students via social media like Facebook, whatapps and others.



2.9 Other Factors that Influences Knowledge Sharing

Several number of research found that trust is the critical factor to determine the success of knowledge sharing in organization (M. Ismail & Yusof, 2012; Wickramasinghe & Widyaratne, 2012; Holste & Fields, 2010). However, another research had been done on factors of trust, knowledge sharing attitude and rewards on knowledge sharing in public sector (Nazrin Izwan Mohd Noh, 2013). Furthermore, Nur Syazwani Mohd Nawi (2009) argued that perceived behavioral control, subjective norm, and attitude with knowledge sharing behaviour among academic staff.

In addition, some research had done to identify the perception on student knowledge sharing in universities either in public universities or private universities. Trust, perception, university's culture, universities's structure, information resources, general attitude, preferred sources for study related tasks, types of information, preferred medium will influences knowledge sharing behavior of undergraduate students (Wei, Choy, Chew, & Yen, 2012).

In some extent, there are several factors that affect knowledge sharing behavior from different levels and perspective which are individual, team and cultural characteristics, motivational factors, environment factors, interpersonal (Wang & Noe, 2010).

According Rosnani Bt. Daud (2010), tacit knowledge and trust have significant influence to knowledge sharing behavior. In addition, students from private universities are eager to share knowledge with their peers as compared public universities (Wei et al., 2012). Furthermore, Chong and Besharati (2014) argue that knowledge sharing can be influence from different barriers either individual barriers, organizational barriers or technological barriers.

Furthermore, a study had done on knowledge sharing behavior among post graduates in public universities in Malaysia. The result of the study shown that there are non-monetary factors has significant impact towards knowledge sharing among the students. Enjoyment of helping others, self-efficiency, interpersonal trust are non-financial factors promoted knowledge sharing (Mallasi & Ainin, 2015).

However, there are many obstacles and issues in knowledge sharing in organization because knowledge sharing is unnatural (Chennamanani, 2006; Gao, 2004; Riege, 2005). People are not keen to share their knowledge or skills unless there are some benefits or rewards. They know that their knowledge is precious and important for organization or personal development. Same goes to colleges, knowledge sharing is not common among peers in university because they're not practicing knowledge sharing in daily activities. Rewards are not the main drivers contribute to knowledge sharing attitude and behaviour in organization.

2.10 Selection of Factors Influence Knowledge sharing

Numerous studies had been done on the topic of knowledge sharing either locally or globally (Majid, Idio, Shuang, & Wen, 2015). Many researchers interested to identify the gap on knowledge sharing or human behaviour towards knowledge sharing. There are numerous study had done on different factor influences knowledge sharing on undergraduate students but not in the social media context. In line with a previous study that found that the readiness of both soft and hard KM resources are important for knowledge management and knowledge sharing (Chong, 2013), this study selected three factors as predictors of knowledge sharing. The three factors are collaborative learning style, reciprocity and extroversion.

However, in this study, only three factors were selected which are collaborative learning, reciprocity and extroversion. These factors are based on observations and discussions with a group of undergraduates to understand their behavior towards knowledge sharing via social media. At the same, explore from the previous study at journal or thesis related with the factors to support the model of this study.

2.11 Definition of Variables

2.11.1 Knowledge sharing

Knowledge sharing has become one significant aspect in the process of knowledge management that make the right knowledge to the correct person at the right time (Frost, 2013). However, knowledge sharing has become one of the challenges in implementing of effective knowledge management systems (Alavi & Leinder, 2001; Szulanski, 1996; Nonaka & Takeuchi, 1995).

Ain Zuraini (2014) had conducted a research on knowledge sharing behavior among Bumiputra at Small and Medium Enterprise (SMEs) in Kedah. Two factors influence knowledge sharing behavior which are individual factors (sense of self-worth and attitudes) and organizational factors (perceived organizational incentives and management support). The result has shown that individual factors such as sense of self-worth and attitude were related to knowledge sharing behavior in the workplace.

2.11.2 Collaborative Learning Style

Grasha-Riechmann Students' Learning Style Scales (GRSLSS) model is use for this study. Grasha and Riechmann divided students into six group of learning styles. The first group is called independent learning style where an individual can learn on their own without anyone help or guidance. The second group is the dependent learning style where

individual requires someone like a teacher to help them in the learning process. The third group is called collaborative learning style where someone prefers cooperate with others for the learning purpose. The fourth group is called competitive learning style where individual like to compete or challenge with other. The fifth group is called contributive learning style where individual who like to take part in learning activities. The last group is called avoidant learning style where individual who are shy and uninterested in learning .The dimension of collaborative learning style was selected in this study.

Hypotheses 1: There is a significant relationship between collaborative learning style and knowledge sharing.

2.11.3 Reciprocity

Reciprocity implies that individuals foresee knowledge sharing as personally worthwhile or important for reaching a valued collective objective in order to be eager to share (De Vries, R. E., Van Den Hooff, B., & De Ridder, J. A., 2006). Cyr & Choo (2010) also highlighted that reciprocity together with trust promotes knowledge sharing.

Hypotheses 2: There is a significant relationship between reciprocity and knowledge sharing.

2.11.4 Extroversion

Personality defined as a stable pattern of thoughts, emotions, and behavior which extend to different incident through time (Eysenck, 1970; Costa & Mc Crae, 1989; Funder, 2001). There are five broad areas to measure personality called Five Factor Model of personality traits (Goldberg, 1990; McCrae & Costa, 1987; Cabrera, Collins, & Salgado, 2006). The Five Factor Model consists of extroversion, agreeableness, openness to experiences, neuroticism and conscientiousness. The dimension of extroversion was selected to test in this study

Hypotheses 3: There is a significant relationship between extroversion and knowledge sharing.



CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter highlight on the research method to use in this study. All researchers need to identify the most suitable methodology to organize the data collection. It covers research design, measurement, data collection procedure, data analysis techniques and others. According Sekaran (2003) stated that research method as a technique to conduct research in collecting the data, analysis data, evaluate the accuracy of the data in the research.

3.2 Research Framework

The theoretical framework is based on the literature reviews and research problems. The focal point of this study is to test the relationship between the variables of collaborative learning style, reciprocity and extroversion as independent variables and how it affects knowledge sharing as the dependent variable.

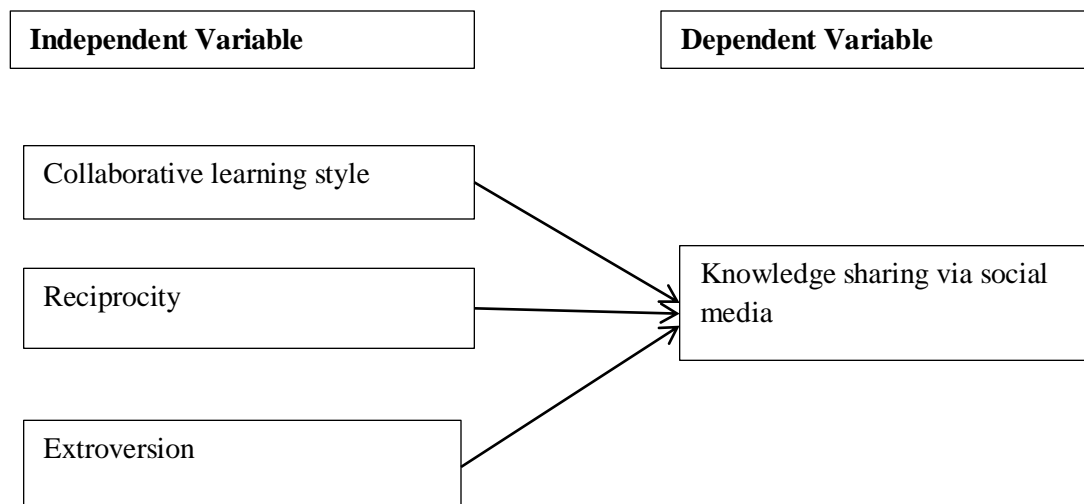


Figure 3.1

Research Framework



UUM
Universiti Utara Malaysia

3.3 Hypothesis Development

This section discusses the hypothesis of this research. Hypothesis is a relation statement between two or more variable which represent the independent variables and dependent variables expected relationship.

Based on previous literature review and the research objectives as outlined in Chapter two, three hypotheses have been developed. The proposed hypotheses of this study are as follows:

H1: There is a significant relationship between collaborative learning style and knowledge sharing.

H2: There is a significant relationship between reciprocity and knowledge sharing.

H3: There is a significant relationship between extroversion and knowledge sharing.

3.4 Research Design

According to Zikmund (2011), there is no perfect research methodology in every study. The approach adopted depends on the research questions and research objectives that enable researchers seek for the answer. Furthermore, the decision to adopt in any research methodology is always a compromise between options or choices (Zikmund, 2011). The choices to be adopted are also frequently influence by the availability of resources and skill possessed by the researcher themselves.

The main objective of this study is to investigate the knowledge sharing behaviour of undergraduate students in University Utara Malaysia. There are several others factor that influence student knowledge sharing with their peers. In order to build a deep understanding, this study conducted an initial research in literature on factors impact on Students knowledge sharing toward their behavior after reviewed some theories which had focused on similar areas as this research. For this research it is decided to use questionnaire approach, the respondents are asked to complete the self-administered questionnaire.

3.4.1 Population Frame

Population is referring to total amount of people, things or event that involve in the study (Uma and Roger, 2009). In addition, Zikmund (2003) also defined population that share common features in the study. In this study, the population included all undergraduate students from three different Colleges: COB, CAS and COLGIS in UUM. The table 3.2 shows the total number of undergraduate students in UUM which is the population of this study.

Colleges	Total Undergraduate Students (people)
College of Business (COB)	8270
College of Arts and Sciences (CAS)	3365

College of Law, Government and International Studies (COLGIS)	3710
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Total	15345
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Table 3.1

Total Undergraduates in UUM. (HEA, UUM)

3.4.2 Sample & Sampling Technique

According Cavana (2000), states that sampling refers to the process of selecting appropriate number of respondents from the population so that can help researcher to understand the characteristics of sample. Population refers to the entire targeted group of people, events that should be focus on (Sekaran, 2003). The population of this study is undergraduate students from three different colleges: College of Business (COB), College of Arts and Sciences (CAS), and College of Law, Government and International Studies (COLGIS) in UUM. According to Sekaran (2003), the guideline for determining sample size should be in the range of between 30 and 500 people. However, Krejcie and Morgan (1970) argue the sample size table show from the overall population size of 15,000 respondents require the sample size of 375 respondents. Therefore, 400 questionnaires have distributed to undergraduate students from three different colleges.

TABLE 1
Table for Determining Sample Size from a Given Population

<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	100000	384

Note.—*N* is population size.
S is sample size.

Table 3.2

Sample size

3.4.3 Validation of Instruments

Questionnaire is the instrument used in this research to collect data from the research sample. The measurement items in this research are adapted from previous researches that have been published in academic journals. The questionnaire used in this research is divided into four sections as below:

Variables	Total items	Scales	Sources (Author Adapted)
1. Knowledge sharing behavior	8	5 Point Likert Scale	Davenport and Prusak (2000) Hsu, M. H., Ju, T. L.; Yen, C. H., and Chang, C. M. (2007)
2. Collaborative Learning Style	10	5 Point Likert Scale	Riechmann and Grasha (1974)
3. Reciprocity	3	5 Point Likert Scale	Bock, G. W.; Zmud, R. W; Kim, Y. G., and Lee, J. N. (2005)
4. Extroversion	7	5 Point Likert Scale	Goldberg (1992)

Table 3.3

Items for questionnaire

3.4.4 Pilot Test

Pilot test is a test where conducted in a small scale of initial research to evaluate the feasibility, cost, time, adverse events and size of the statistical variability.as to predict the sample size and brush up or improve the design of the current study related to full scale research study performances (Hulley, 2007).

In this study, pilot test was conducted in the middle of October 2016. The questionnaire was distributed to 50 undergraduate students in Sultanah Bahiyah Library. There were no changes required to the questionnaire. The internal consistency reliabilities (Cronbach's Alpha) of the research measures from the pilot study are reported in table 3.4.

Variable	Number of items	Cronbach Alpha
Knowledge sharing behavior	8	0.828
Collaborative learning style	10	0.905
Reciprocity	3	0.719
Extroversion	7	0.601

Table 3.4

The Cronbach's Alpha from the Pilot Study (n=50)

3.5 Operational Definition

3.5.1 Knowledge Sharing Behavior

Knowledge sharing behavior is the dependent variable in this study. Knowledge sharing behavior is operationalized as the process of involving knowledge sharing between individuals and groups of people (Davenport & Prusak, 1998). Knowledge sharing behavior was measured by 8 items adapted from Davenport and Prusak (2000) and Hsu et.al. (2007).

3.5.2 Collaborative Learning Style

Collaborative learning style is one of the independent variables in this study. In this study, the Grasha-Riechmann Students' Learning Style Scales (GRSLSS) is used to test the relationship between knowledge sharing among students in UUM. There are 10 items adapted from Riechmann and Grasha (1974) with collaborative learning style dimension for this study.

3.5.3 Reciprocity

Reciprocity is one of the independent variables in this study. Reciprocity refers to the degree of an individual believe that he or she can enhance mutual relationship with

others by promoting knowledge sharing. Reciprocity was measured by 3 items adapted from Bock, G. W.; Zmud, R. W; Kim, Y. G., and Lee, J. N. (2005).

3.5.4 Extroversion

Extroversion is an independent variable in this study. Extroversion is used to test the relationship toward knowledge sharing among students in UUM in different three different colleges. Personality traits were measured by 7 items adapted from Goldberg (1992).



3.6 Measurement of Variables

The questionnaire is designed to collect the primary data. In total, there are 28 questions with 5-point likert scales in the questionnaire as shown in the table 3.3. The first section of questionnaire called Part A start from the demographics of the respondents with multiple choices which including gender, age, education level, schools, races, nationality and religion. Second part called Part B: Knowledge sharing behavior encompass 8 questions. The third part called Part C: Collaborative learning style which has 10 questions. The fourth part called Part D: Reciprocity which has 3 questions. Last part is Part E: extroversion. The questionnaire is designed into two languages which are Malay and English language to avoid misunderstanding.



3.7 Data Collection and Administration

This study relies on primary data which is questionnaire. The questionnaire has been constructed to gather the information of this study. The questionnaire was randomly distributed to the undergraduate students from College of Business (COB), College of Arts and Sciences (CAS) and College of Law, Government and International Studies (COLGIS) in University Utara Malaysia (UUM). A total of 400 sets of questionnaire were randomly distributed for three Colleges undergraduate students. Every respondent are given sufficient of time to complete the questionnaire.

3.7.1 Type of Study

This study is quantitative study where involve hypothesis testing where individual respondent represents a unit of analysis to test the relationship between two factors in the study. Besides that, descriptive analysis was conducted to more understand on the features of the variables in this study. This research was examined the relationship between independent variables and dependent variable. The independent variables are collaborative learning style, reciprocity and extroversion. And the dependent variable is student knowledge sharing.

3.7.2 Sources of Data

Basically, the data collected in this study from primary sources. The primary data is from the structured questionnaire survey.

3.7.3 Unit of Analysis

This study is focus on undergraduates in three Colleges: COB, CAS, and COLGIS in UUM. Unit of analysis is focused on a group of undergraduate students from three different colleges. The exact number of total undergraduate students was collect from Academic Affair Department (HEA) in UUM



3.8 Data Analysis Techniques

A quantitative data has been collected and analysed the data by using the Statistical Package for the Social Sciences (SPSS) version 23 in order to provide answers research objectives and research questions. Reliability analysis, descriptive analysis, regression analysis were been used as statistical tools in this study. Descriptive analysis was used to analyse the demographic variable which stated in the section A in the questionnaire. Reliability analysis was used to measure the consistency of all the variables in the study.



CHAPTER FOUR

RESULT AND DISCUSSION

4.1 Introduction

This chapter presents the analysis from the survey questionnaires distributed to the respondents. All the data was analysed using Statistical Package for the Social Sciences (SPSS) version 23. The results are presented into five (5) sections. The sections start with the reliability analysis, descriptive analysis, mean score analysis, correlation analysis and hypotheses testing on the variables. The study was found five missing value from the survey questionnaire. The five missing values were replaced with the method of “Mean of nearby point”, where this method will provide the missing value to the nearest mean score of from the each variable of the missing value.

4.2 Response Rate

In total, there are of 400 set of questionnaires have been distributed in Sultanah Bahiyah Library UUM. Only 370 sets of the questionnaire were completed. Therefore, the response rate was only 92.5% of respondents. Most of the questionnaires received were answer completely. However, only 90.75% questionnaires were used in this study. According to Sekaran (2010), if the questionnaire more than 25% of the items not fully

answered will subject to be rejected from the analysis. The summary of the respondent's response in this study is as stated in table 4.1 below.

Questionnaire response	Rate (%)
Number of questionnaire distributed	100.00
Returned questionnaires	92.50
Usable questionnaires	90.75

Table 4.1

Respondent's response rate

4.3 Data Screening

Date screening was performed to ensure that all the data collected from the questionnaires are ready and clean for further analysis. This is very important step for all the studies to make sure all the data collected are valid and reliable to test the causal theory.

4.3.1 Missing Data

The analysis of missing data found that there are five missing values for all the items in the questionnaire. Thus, the method of "Mean of nearby point" was used to replace the missing value to the nearest mean score of from the items of the missing value. The method of "Mean of nearby point" is located in the Statistical Package for the Social Sciences (SPSS) version 23.

4.4 Background of Respondent

Descriptive analysis was conducted in order to explain about frequency and demographic factors in the study such as gender, age, level of education, college, race, nationality and religion. A total of 370 respondents had participated in this study. However, only 363 sets of questionnaires are usable in order to run the analysis. The first part of demographic section is gender. The participants in this study encompass two genders which are male and female. The male students involve in this study are 25.10% (n=91) and the female students are 74.90% (n=272). In addition, the age of respondents divided into four categories. The summary of the respondents according to gender shown in table 4.2.

Majority of the participants in this study are from the age group of (20-25 years old) which recorded 82.40% (n=299), follow by the age group of (Below 20 years old) which recorded 17.60% (n=64) and lastly there is no participant from age group of (26-30 years old) and above. The summary of the respondents according to age group shown in table 4.2.

Furthermore, there are three categories of level of education level in this study. In this study, all the respondents are Bachelor Degree which recorded 100% (n=363). The summary of the respondents according to level of education shown in table 4.2.

In total, there are three main colleges in UUM. The participation of respondent in College of Business (COB) is 51.80% (n=188), College of Arts and Sciences (CAS) is 25.30% (n=92) and College of Law, Government and International Studies (COLGIS) is 22.90% (n=83). The summary of the respondents according to colleges as shown in table 4.2.

Moreover, the respondents in the study divided into four categories of races. The respondents are mostly from Malay which recorded 60.10% (n=218) and follow by Chinese reported 33.60% (n=122), India reported 2.80% (n=10) and others are recorded 3.60% (n=13). The summary of the respondents according to race shown in table 4.2.

In this study, there are two nationalities which are Malaysian and non-Malaysian. The survey questionnaire filled by mostly Malaysian students in UUM which recorded 97.80% (n=355), whereas the remaining survey questionnaire filled by non-Malaysian student or foreign students which recorded 2.20% (n=8).

The last part of demographic of the survey questionnaire is religion. There are six categories of religion in the study. The respondents from the survey questionnaire mostly from the Islam religion which reported 62.30% (n=226), follow by Buddha which recorded 31.70% (n=115), Hindu recorded 2.80% (n=10). Christian recorded 1.70% (n=6) and others religion recorded 1.40% (n=5). And lastly, Catholic recorded 0.3% (n=1) in this study.

Table 4.2

Demographic of Respondents

Demographic Characteristics (n=72)	Frequency	Percentage (%)
1- Gender		
Male	91	25.10
Female	272	74.90
2- Age		
< 20 years' old	64	17.60
20-25 years' old	299	82.40
26-30 years' old	0	0.00
3- Education Level		
Bachelor Degree	363	100.00
Master Degree	0	0
PhD Degree	0	0
4-College		
College of Business (COB)	188	51.80
College of Arts and Sciences (CAS)	92	25.30
College of Law, Government, International Studies (COLGIS)	83	22.90
5- Race		
Malay	218	60.10
Chinese	122	33.60
India	10	2.80
Others	13	3.60
6-Nationality		
Malaysian	355	97.80
Non Malaysian	8	2.20
7- Religion		
Islam	226	62.30
Buddha	115	31.70
Christian	6	1.70
Catholic	1	0.30
Hindu	10	2.80
Others	5	1.40

4.5 Reliability and Normality Analysis

4.5.1 Reliability Analysis

Reliability analysis is to measure the consistency of the instrument to measure the concept and help to access goodness of measures (Cavana, et. al, 2001). Basically, an alpha coefficient of 0.60 is considered poor but acceptable, those in the range of 0.70 are moderate and those over 0.80 are considered good (Cavana et. al., 2000). Reliability analysis was performed on the data obtained from the actual study in order to measure the reliability of scales and internal consistency of the scales that was used. Data in this study was collected from 363 respondents, the reliability analysis was performed based on the dimension and variables of the study. The result of the reliability analysis was in the range of 0.61 to 0.83 as shown on Table 4.3. The Cronbach's alpha value for the independent variable of collaborative learning style is 0.83, reciprocity is 0.73 and extroversion is 0.61. Furthermore, the Cronbach's Alpha value for the dependent variable of knowledge sharing behavior is 0.74.

Table 4.3

Reliability Statistic

Variable	Number of items	Cronbach Alpha
Knowledge sharing behavior	8	0.74
Collaborative learning style	10	0.83
Reciprocity	3	0.73
Extroversion	7	0.61

4.5.2 Normality Analysis

The normality analysis was used to determine the normality of the data distributed in this study. In order to test normality of data, skewness and kurtosis values for each variables is been examined. According Chua (2012) the value of zero (0) for skewness and kurtosis will show 100% normal distribution of the data. Positive skewness value show that the graph has a positive slant whereas a negative skewness value shows that the graph has a negative slant. Kurtosis indicate the degree in the peak of the graph.

According to Munro (2005) examine that skewness and kurtosis analysis can determine the questionnaires are distributed normally. The data considered normally distributed if the value of the skewness and kurtosis is between -1.96 and +1.96 at $p < 0.05$ significant level (Hair et.al., 2007). There are different schools of thoughts for the value of skewness and kurtosis which consider the questionnaire distributed normally. According to George and Mallery (2010) stated that the criteria for normal distribution where skewness and kurtosis value within -2 and 2. The result for the normality test based on the value of skewness and kurtosis of each variable in this study as shown in table 4.4 below:

Table 4.4

Normality Test of the Variables

Variables	N	Skewness	Kurtosis
Knowledge sharing behavior	363	-0.21	0.14
Collaborative learning style	363	-0.57	0.95
Reciprocity	363	-0.68	0.75
Extroversion	363	-0.14	0.70

The result in table 4.4 shows that the data for all of the variables in this study have a normal distribution. This is because all the value from the skewness and kurtosis are fall between -1.96 and +1.96 at $p < 0.05$ significant level. Therefore, in this study the questionnaire of the normality testing fulfil both requirement from different school of thought which shown the questionnaires are distributed normally.

4.6 The Analysis of Mean Scores

Descriptive analysis was used in order to explain the mean, median, mode, range and standard deviation of the variables in this study. Mean valued divided into three levels which start from (1.00-2.25) which classify as low level, follow by (2.26-3.75) classify moderate level and high level recorded (3.76-5.00) (Hair et. al., 2007). In this study, the mean value for the dependent variable is considered as moderate at 3.42. The mean value for the independent variable for reciprocity at 3.58 and extroversion at 3.51 are consider moderate however collaborative learning style considered high mean score which recorded at 4.06. Table 4.5 shown all the mean, standard deviation score for all the variables in this study.

Table 4.5

Statistical scores for all Variables

	Knowledge sharing behavior	Collaborative learning style	Reciprocity	Extroversion
Mean	3.42	4.06	3.58	3.51
Std. Deviation	0.72	0.53	0.77	0.48
Minimum	1.38	1.67	1.00	2.00
Maximum	4.88	5.00	5.00	4.86

4.7 T-test Analysis

The t-test analysis took into consideration the means and standard deviation of the group on the variable (Cavana et. al, 2001). According to Roberts (2008) the t-test was used to investigate the differences among item means and categorical data. However, in this study do not perform T-test analysis because there are found unequal group size for gender.

4.8 Analysis of Variance (ANOVA)

The one way ANOVA analysis was used to test the differences in mean score among different group of respondents. In this study, one way ANOVA analysis was used to examine whether there are significant differences in the mean scores on the dependent variable (knowledge sharing behaviour) across the three groups: college groups, religion groups and races groups.

1. College

A one way between groups analysis of variance was conducted to examine the impact of college on knowledge sharing behaviour score. Respondents were divided into three groups (COB, CAS, COLGIS). There was statistical difference at the $p < 0.996$ level in knowledge sharing behaviour for three college groups. Despite reaching statistical significance, the actual difference in mean score between groups was quite small.

Therefore, there is no statistical significant difference in mean scores between three college groups and knowledge sharing behavior.

Table 4.6

ANOVA Tests Result for College

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.004	2	.002	.004	.996
Within Groups	185.204	367	.505		
Total	185.208	369			

2. Religion

A one way between groups analysis of variance was conducted to explore the impact of religion on knowledge sharing behaviour score. Respondents were divided into six groups (Islam, Buddha, Christian, Catholic, India, Others). There was statistical difference at the $p < 0.003$ level in knowledge sharing behaviour for six religion groups. Despite reaching statistical significance, the actual difference in mean score between groups was quite small. Post-hoc comparisons using the Tukey HSD test indicated that the mean score for Islam ($M = 3.50$, $SD = 0.69$) was significantly different from Buddha ($M = 3.25$, $SD = 0.76$) at $p\text{-value} = 0.03 < 0.05$.

Table 4.7

ANOVA Test Result for Religion

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	9.01	5	1.80	3.65	.003
Within Groups	176.29	357	0.49		
Total	185.30	362			

Descriptives

KSB

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
ISLAM	225	3.5044	.68779	.04585	3.4141	3.5948
BUDDHA	115	3.2489	.75537	.07044	3.1094	3.3885
CHRISTIAN	6	2.9583	.54582	.22283	2.3855	3.5311
CATHOLIC	2	3.5625	1.32583	.93750	-8.3496	15.4746
HINDU	10	3.6625	.51724	.16356	3.2925	4.0325
OTHERS	5	3.9000	.38931	.17410	3.4166	4.3834
Total	363	3.4246	.71545	.03755	3.3507	3.4984

Multiple Comparisons

Dependent Variable: KSB
Tukey HSD

(I) RELIGION	(J) RELIGION	Mean Difference (I-J)	Std. Error	Sig.
ISLAM	BUDDHA	0.25	.081	0.03
	CHRISTIAN	0.54	0.30	0.44
	CATHOLIC	-0.40	0.32	0.80
	HINDU	-0.17	0.23	0.98
	OTHERS	-0.40	0.32	0.80
BUDDHA	ISLAM	-0.25	.081	0.03
	CHRISTIAN	0.29	0.30	0.92
	CATHOLIC	-0.65	0.32	0.33
	HINDU	-0.41	0.23	0.48
	OTHERS	-0.65	0.32	0.33
CHRISTIAN	ISLAM	-0.54	0.29	.044
	BUDDHA	-0.29	0.29	0.92
	CATHOLIC	-0.94	0.43	0.32

CATHOLIC	HINDU	-0.70	0.36	0.37
	OTHERS	-0.94	0.43	0.25
	ISLAM	0.40	0.32	0.78
	BUDDHA	0.65	0.32	0.49
	CHRISTIAN	0.94	0.43	0.32
HINDU	HINDU	0.24	0.39	0.96
	OTHERS	0.00	0.44	1.00
	ISLAM	0.17	0.23	0.97
	BUDDHA	0.41	0.23	0.45
	CHRISTIAN	0.70	0.36	0.37
OTHERS	CATHOLIC	-0.24	0.39	0.96
	OTHERS	-0.24	0.39	1.00
	ISLAM	0.40	0.32	0.82
	BUDDHA	0.65	0.32	0.33
	CHRISTIAN	0.94	0.43	0.25
	CATHOLIC	0.00	0.44	1.00
	HINDU	0.24	0.39	1.00

*. The mean difference is significant at the 0.05 level.

3. Race

A one way between groups analysis of variance was conducted to explore the impact of religion on knowledge sharing behaviour score. Respondents were divided into four race groups (Malay, Chinese, India, Others). There was statistical difference at the $p < 0.05$ level in knowledge sharing behaviour for four groups $F(3, 369) = 3.24, p < 0.05$. Despite reaching statistical significance, the actual difference in mean score between groups was quite small. The effect size was calculated using eta squared was 0.025. Post-

hoc comparisons using the Tukey HSD test indicated that the mean score for Malay ($M = 3.4760$, $SD = 0.6911$) was significantly different from Chinese ($M = 3.2572$, $SD = 0.7237$) at $p\text{-value} = 0.030 < 0.05$.

Table 4.8

Homogeneity Test for Race Groups

Test of Homogeneity of Variances

KSB

Levene Statistic	df1	df2	Sig.
.843	3	359	.471

ANOVA

KSB

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.661	3	1.887	3.771	0.011
Within Groups	179.634	359	.500		
Total	185.295	362			

Descriptives

KSB

	N	Mean	Std. Deviation	Std. Error	Minimum	Maximum
MALAY	220	3.4938	.69901	.04713	1.50	6.00
CHINESE	122	3.2582	.74356	.06732	1.38	4.75
INDIA	10	3.6625	.51724	.16356	3.00	4.50
OTHERS	11	3.6705	.57628	.17376	2.75	4.38
Total	363	3.4246	.71545	.03755	1.38	6.00

Multiple Comparisons

Dependent Variable: KSB

Tukey HSD

(I) RACE	(J) RACE	Mean Difference (I-J)	Std. Error	Sig.
MALAY	CHINESE	.23555	.07985	.018
	INDIA	-.16875	.22872	.882
	OTHERS	-.17670	.21855	.850
CHINESE	MALAY	-.23555	.07985	.018
	INDIA	-.40430	.23268	.306
	OTHERS	-.41226	.22269	.251
INDIA	MALAY	.16875	.22872	.882
	CHINESE	.40430	.23268	.306
	OTHERS	-.00795	.30907	1.000
OTHERS	MALAY	.17670	.21855	.850
	CHINESE	.41226	.22269	.251
	INDIA	.00795	.30907	1.000

*. The mean difference is significant at the 0.05 level.



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4.9 Correlation Analysis

Correlation analysis is an inferential analysis which to examine the relationship between the independent and dependent variables (Chua, 2012). Bivariate correlation method was conducted to test the relationship between dependent and independent variables in this study. Table 4.13 shows the inter-correlations coefficients (r) among variables. The r value can be categories into three condition: (1) to indicate whether the correlation coefficient is statistically significant, (2) to determine the strength of between variables, (3) to check on the direction of the relationship between variables either positive or negative direction between variables (Hair et. al, 2007).

According to Hair et.al (2007) r value divided into three categories. The first category is if the r value less than 0.33 which indicate that there is a weak relationship between variables. The second category is if the r value in between 0.34 and 0.66 which indicate that moderate relationship between variables. And the last category is if r value greater than 0.67 indicate that there is strong relationship among variables.

Correlations				
	Knowledge sharing behavior	Collaborative learning style	Reciprocity	Extroversion
Knowledge sharing Behavior	1			
Collaborative learning style	0.380**	1		
Reciprocity	0.434**	0.401**	1	
Extroversion	0.324**	0.373**	0.291**	1

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

Table 4.9

Correlation of variables

As shown in the Table 4.9, all the variables correlation coefficients were statistical significant at moderate and weak correlation. The highest correlation is between reciprocity and knowledge sharing behaviour at ($r=0.434$, $p< 0.01$). While the weakest correlation is ($r=0.324$, $p<0.01$) between extroversion and knowledge sharing behaviour. In addition, the moderate correlation is ($r=0.380$, $p<0.01$) between collaborative learning style and knowledge sharing behaviour.



4.10 Regression Analysis

Multiple regression analysis was performed to identify the predictors of knowledge sharing among undergraduates via social media as conceptualized in the model. Table 4.10 show the result of regression analysis among all variables in the study.

Table 4.10

Regression Analysis

Model	R	R Square	Adjusted R Square
1	.510 ^a	.260	.254

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	48.242	3	16.081	42.122	.000
Residual	137.053	359	.382		
Total	185.295	362			

Overall, the result for regression analysis are significant at $p < .000$. The predictors (collaborative learning style; reciprocity; extroversion) in the proposed model revealed 26 percent of the observed variance in knowledge sharing. The regression model show 74% percent of knowledge sharing among undergraduate students via social media is not depicted in the model.

Further analysis also revealed all of the independent variables are significant ($p < .000$) as indicated in Table 4.15 below. Reciprocity is the most important factor that affect on undergraduate students toward knowledge sharing (6.1). This followed by collaborative learning style (3.8) and extroversion (3.3).

Table 4.11

Coefficient of Regression

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.479	.297		1.612	.108
Collaborative learning style	.265	.070	.196	3.776	.000
Reciprocity	.287	.047	.308	6.131	.000
Extroversion	.240	.073	.162	3.263	.001

With the result, all of the independent variables are significant ($p < .000$). Summary of the hypotheses result are shown in Table 4.11.

Table 4.12

Summary of Hypotheses Testing Results

Hypotheses	Result
H ₁ : There is a significant relationship between collaborative learning style and knowledge sharing behavior.	Accepted
H ₂ : There is a significant relationship between reciprocity and knowledge sharing behavior.	Accepted
H ₃ : There is a significant relationship between extroversion and knowledge sharing behavior.	Accepted

4.11 Summary of Chapter

This chapter has summarized the demographic characteristics of the 363 respondents and the results of correlation and regression analysis. The result indicated that all independent variables such as collaborative learning style, reciprocity and extroversion have significant positive relationship with knowledge sharing behavior.



CHAPTER FIVE

CONCLUSION

5.1 Introduction

This chapter starts with a discussion on the findings of the study by comparing it with previous studies and existing theory. The objective of this study is to identify the relationship between collaborative learning style, reciprocity and extroversion towards knowledge sharing among UUM students via social media. These research hypotheses are tested with a field survey of 370 respondents. The discussions in this chapter have provided some recommendation on how to improve knowledge sharing among students on others university. In addition, these recommendations might also be useful for future researchers to conduct a similar research.

5.2 Overview of the Finding

The main purpose of this study is to investigate the factors that might influence knowledge sharing among university students via social media. This research provided a review of factors that affect knowledge sharing among UUM students via social media like Facebook and Whatapps. To meet the purpose of study, quantitative approach was used to collect the data and provide answers on factors that influence knowledge sharing

among students via social media. Therefore, the major findings of this research are discussed according to the factors depart in the hypotheses mentioned. A study done by Eid & Al-Jabri (2016) mention that use of social medias like Whatapps and Facebook are common used among university students for the purpose of chatting, discussion, file sharing and this shown positively affect knowledge sharing and impact student learning.

5.2.1 Collaborative learning style and knowledge sharing

The first hypothesis was tested to examine the relationship between collaborative learning style and knowledge sharing towards UUM students via social media. The respondents were ask to rate their collaborative learning style towards knowledge sharing. In this study, the collaborative learning style were selected to test the relationship with knowledge sharing behavior among UUM students via social media. The result shown there is a positive significant relationship between collaborative learning style and knowledge sharing among UUM students via social media. This finding is supported by Wei et.al. (2012), who mention that structured group activities promote knowledge sharing among undergraduates in Malaysia. Academicians should emphasis more on collaborative learning style among students. However, according to Tomsic and Suthers (2006), information sharing and learning in social network have more significant impact with collaborative interaction.

5.2.2 Reciprocity and knowledge sharing

Second hypothesis was tested to examine the relationship between reciprocity and knowledge sharing among UUM students via social media. There was a positive significant relationship between reciprocity and knowledge sharing. The finding of this study is aligned with previous researchers who opined that in online network environment, reciprocity has shown to increase knowledge sharing (Wasko and Faraj, 2005).

5.2.3 Extroversion and knowledge sharing

The third hypothesis was tested to examine the relationship between extroversion and knowledge sharing among UUM students via social media. There was positive significant relationship between extroversion and knowledge sharing. Several studies had been done on extroversion and knowledge sharing. Some studies found that positive influence of the extroversion traits on knowledge sharing (DeVries et al., 2006; Ferguson et al., 2010). Extraverts tend to shared knowledge whether they would be accounted and rewarded for it (Wang et. al, 2011). Study conducted on teachers' extroversion towards knowledge sharing behavior. The result shown only extroversion has positive significant influence on knowledge sharing attitude and behavior among teachers in Ghana (Agyemang, Dzandu, & Boateng, 2016).

Contrary to the view of Gupta (2008) where argue that there is no significant difference in knowledge sharing and acquisition activities among individual student on extroversion on postgraduate students in India.



5.3 Limitation of the Study

There are several limitations in conducting this study. The focus of this study is limited to local undergraduates from three different colleges in Universiti Utara Malaysia (UUM). Therefore, the result in this study can be generalized only to local undergraduates and not applicable to students from private institution or university or colleges.

This study only limited by the three independent variables of collaborative learning style, reciprocity, and extroversion and the dependent variables of knowledge sharing behavior. Furthermore, the respondent's assessment of the questions also is one of the limitation in this study. Regression analysis have verified that collaborative learning style, reciprocity and extroversion can only explain 26% of the factors that affect knowledge sharing behavior among undergraduate in UUM via social media. Others factors such as trust, attitude, perceived behavioral control, factors limiting and motivators that influence knowledge sharing are not included in the model.

5.4 Implication

Based on a comprehensive review of the existing literature on knowledge sharing and presented in previous chapter three hypotheses predicting various effects of knowledge sharing behavior was investigated. Empirical data was then collected for testing the hypotheses.

Finding presented in this study play important implications for academics concerned with the factors influencing knowledge sharing among university students either in classroom or even outdoor curriculum activities.

There are several important reasons why investigating on factors that influencing knowledge sharing among university students via social media. From the knowledge creation perspective, through knowledge sharing activities, new knowledge can be form from the existing knowledge. Students are exposing with different kind of knowledge either from reading books, seeking knowledge from internet, attend seminar, workshop and conferences or even learn from their senior's experiences.

Knowledge becomes the most critical resources either in industry or academic field to enhance productivity and performances. In the era of information technology, organizations are competing with one another. In order to stay competitiveness, organizations need to create new idea or innovate existing idea to solve the problem faced by community. Leaders or lecturers are played some roles to motivate knowledge sharing. Knowledge only can be shared from one entity to another entity in the form of text, voices, visual, and others. Thus, knowledge sharing is becoming an important trend in this modern society. Last but not least, this study is useful for the academicians to serve as a reference and may provide some guides for future research on knowledge sharing domain.

5.5 Recommendation of the study

In this study do not cover every aspect on knowledge sharing on undergraduate students. Therefore, there is a need to study focus on specific types of knowledge (explicit or implicit knowledge) to be shared among undergraduate and postgraduate students. Medium of knowledge sharing activities take place and what context of knowledge sharing occur in university.

This study on focus on academics industry, whereby the future study need to extend the exploration of knowledge sharing on other types of industries which involve other races and variables or factors facilitate knowledge sharing. Thus, it is recommended for future research may replicate the study with different environment and geographical area and sample. In addition, religiosity and ethnicity should deeply explore on knowledge sharing behavior among employees or students or community via social media for future research.

5.6 Conclusion

In a nutshell, this study has achieved its objective to provide awareness to the research questions in this research. The findings of the study have shown that collaborative learning style, reciprocity and extroversion have positive significant relationship with knowledge sharing among undergraduate students in UUM. Based on the findings, this study has discussed the research hypothesis and provides several recommendations towards knowledge sharing for future research.

REFERENCES

- Abidin, M. J. Z., Rezaee, A. A., Abdullah, H. N., & Singh, K. K. B. (2011). Learning Styles and Overall Academic Achievement in a Specific Educational System. *International Journal of Humanities and Social Science*, 1(10), 143–152.
- Agyemang, F. G., Dzandu, M. D., & Boateng, H. (2016). Knowledge sharing among teachers: the role of the Big Five Personality Traits. *VINE Journal of Information and Knowledge Management Systems*, 46(1), 64–84.
<http://doi.org/10.1108/VJIKMS-12-2014-0066>
- Ahmad, F. (2003). Tacit Knowledge Dissemination among UUM Lecturers. Unpublished Master degree dissertation, Universiti Utara Malaysia, Malaysia
- Ain Zuraini Bt. Zin Aris. (2014). Examining Relationships Between Individual, Organizational Factor & Knowledge Sharing Behavior. *Universiti Utara Malaysia*. Retrieved from http://etd.uum.edu.my/4128/13/s811009_abstract.pdf
- Alavi, M. & Leidner, D. E. (2001) Review: Knowledge Management and Management Systems: Conceptual Foundations and Research Issues. *MIS Quarterly*, 25(1), 107-136.

Alavi, M. and Leidner, D. E. (2001). Review: Knowledge management and knowledge

management systems: Conceptual foundations and research issues, MIS quarterly, pp.
107-136.

Al-Alawi, A. I., Al-Marzooqi, N. Y., & Mohammed, Y. F. (2007). Organizational
culture and knowledge sharing: critical success factors. Journal of Knowledge
Management, 11(2), 22–42. doi:10.1108/13673270710738898

Al-Hawamdeh, S. (2003). Knowledge management cultivating knowledge
professionals. Oxford: Chandos Publishing.

Amayah, A. T., & Nelson, F. F. (2010). Knowledge Sharing – Types of Knowledge
Shared and Rewards.

Amayah, A. T. (2013). Determinants of knowledge sharing in a public sector
organization. Journal of Knowledge Management, 17(3), 454–471.
doi:10.1108/JKM-11-2012-0369

Bakhuizen, N. (2012). Knowledge Sharing using Social Media in the Workplace: A
chance to expand the organizations memory, utilize weak ties, and share tacit
information?

Bartol, K.M. and Srivastava, A. (2002), “Encouraging knowledge sharing: the role of organizational reward systems”, *Journal of Leadership and Organization Studies*, 9, 64-76

Bellefroid, B. (2012) The new way of knowledge sharing a thesis research about the effects of NWOW on knowledge sharing, [Online], Available: <http://www.cs.uu.nl/education/scripties/pdf.php?SID=INF/SCR-2012-009>

Bennett, S., Maton, K. and Kervin, L. (2008), “The ‘digital natives’ debate: a critical review of the evidence”, *British Journal of Educational Technology*, 39(5), 775-786.

Brosdahl, D.J. and Carpenter, J.M. (2011), “Shopping orientations of US males: a generational cohort comparison”, *Journal of Retailing and Consumer Services*, 18, 548-554.

Bock, G. W. & Kim, Y. G. (2002). Breaking the Myths of Rewards: An Exploratory Study of Attitudes about Knowledge Sharing. *Information Resources Management Journal*, 15(2), 14-21.

Bolton, R. N., Parasuraman, A., Hoefnagels, A., Migchels, N., Kabadayi, S., Gruber, T., ... Solnet, D. (2013). Understanding Generation Y and their use of social media: a review and research agenda. *Journal of Service Management*, 24(3), 245–267.

Boyd, danah m., & Ellison, N. B. (2012). A Conceptual Analysis of Social Networking and its Impact on Employee Productivity. *Journal of Business and Management*,

1(2), 48–52. <http://doi.org/10.9790/487X-0124852>

Burns, M., Pierson, E., & Reddy, S. (2014), “Working together: How teachers teach and students learn in collaborative learning environments”, *International Journal of Instruction*, 7(1), 17-32

Cabrera, A., Collins, W. C., & Selgado, J. F. (2006). Determinants of individual engagement in knowledge sharing. *International Journal of Human Resources Management*, 17(2), 245-264. <http://dx.doi.org/10.1080/09585190500404614>

Cavana, R. Y., Delahaye, B. L., & Sekaran, U. (2001). *Applied Business Research*. Theoretical framework. New York. Prentice Hall.

Chai, S., Das, S., & Rao, H. R. (2011). Factors Affecting Bloggers’ Knowledge Sharing: An Investigation Across Gender. *Journal of Management Information Systems*, 28(3), 309–342. <http://doi.org/10.2753/MIS0742-1222280309>

Chen, Irene YL, & Chen, Nian-Shing. (2009). Examining the Factors Influencing Participants' Knowledge Sharing Behavior in Virtual Learning Communities. *Journal of Educational Technology & Society*, 12(1).

Chennamaneni, A. (2006). Determinants of Knowledge Sharing Behavior: Developing and Testing an Integrated Theoretical Model. Unpublished doctoral dissertation, University of Texas, Arlington.

Chong, Y. W. (2013). *Formulating an integrated framework for conceptualizing, operationalizing and advancing knowledge management*. PhD, Universiti Malaya, Kuala Lumpur.

Chong, C. W., & Besharati, J. (2014). Challenges of knowledge sharing in the petrochemical industry. *Knowledge Management & E-Learning: An International Journal (KM&EL)*, 6(2), 171–187. Retrieved from <http://kmel-journal.org/ojs/index.php/online-publication/article/view/256>

Chong, C., Teh, P., & Tan, B. (2014), “Knowledge sharing among Malaysian universities” students: Do personality traits, class room and technological factors matter?”, *Educational Studies*, 40(1), 1-25.

Christine Tan, N. L. (2011). Culture and trust in fostering knowledge-sharing. *Journal of Knowledge Management*, 9(4), 328–339. <http://doi.org/10.1057/kmrp.2011.37>

Connelly, C. E., & Kelloway, K. (2003). Predictors of employees’ perceptions of knowledge sharing cultures. *Leadership & Organizational Development Journal*, 24(5/6), 294-301.

- Costa, J. R., & McCrae, R. R. (1989). *NEO PI-R professional manual*. Odessa, FL: Psychological Assessment Resources, Inc.
- Crawford, C. B (2005). Effects of transformational and learning orientation. *Leadership & Organization Development Journal*, 19(3), 164-172.
- Cyr, S., & Choo, C. W. (2010). The Individual and Social Dynamics of Knowledge Sharing – An Exploratory Study, 67(1), 1–37.
- Dabbagh, N., & Reo, R. (2011a). Back to the future: Tracing the roots and learning affordances of social software. In M. J. W. Lee, & C. McLoughlin (Eds.), *Web 2.0-based e-learning: Applying social informatics for tertiary teaching* Hershey, PA: IGI Global, 1–20.
- Davenport, T. H., and De Long, D. W. (1998). Successful knowledge management projects. *Sloan Management Review*, 39(2): 43-57.
- Davenport, T. H., & Pruzak, L. (2000). *Working knowledge: How organizations manage what they know*. Boston: Harvard Business Press.
- De Vries, R. E., Van Den Hooff, B., & De Ridder, J. A. (2006). Explaining knowledge sharing: The role of team communication styles, job satisfaction, and performance beliefs. *Communication Research*, 33(2), 115–135.

Drucker P.F. (1993). *Post-Capitalist Society*. HarperBusiness: New York.NY

Eid, M. I. M., & Al-Jabri, I. M. (2016). Social networking, knowledge sharing, and student learning: The case of university students. *Computers & Education*, 99, 14–27. <http://doi.org/10.1016/j.compedu.2016.04.007>

Eysenck, H. J. (1970). *The structure of human personality* (3rd ed.). London: Methuen

Falk, A., and Fischbacher (2006). A theory of reciprocity. *Games and Economic Behavior*, 54(2), 293–315.

Frost, A. (2013). *An educational KM site: Knowledge sharing*. Retrieved 13 October 2015, from <http://www.knowledge-management-tools.net/knowledge-sharing.html>

Funder, D. C. (2001). *The personality puzzle* (2nd ed.). New York: Norton.

Furnham, A., Jackson, C. J., & Miller, T. (1999). Personality, learning style and work performance. *Personality and Individual Differences*, 27(6), 1113–1122. [http://doi.org/10.1016/S0191-8869\(99\)00053-7](http://doi.org/10.1016/S0191-8869(99)00053-7)

Gaál Z., Szabó, L. and Obermayer-Kovács, N. (2014) 'Personal knowledge sharing: Web 2.0 role through the lens of Generations', ECKM 2014 – *Conference Proceedings*, 15th European Conference on Knowledge Management, Santarem, 362-370.

- Gao, S. (2004). Understanding Knowledge Sharing Behavior. Unpublished Master Degree Dissertation, The Hong Kong University of Science and Technology.
- Gao, F., Li, M., & Clarke, S. (2008). Knowledge, management and knowledge management in business operations. *Journal of Knowledge Management*, 12(2), 3-17.
- George, D. & Mallery, M. (2010). Using SPSS for Windows step by step: a simple guide and reference. Boston, MA: Allyn & Bacon.
- Goldberg, L. R. (1990). An alternative description of personality-the big five factor structure. *Journal of Personality and Social Psychology*, 59(6), 1216-1229.
<http://dx.doi.org/10.1037/0022-3514.59.6.1216>
- Goldberg, L.R. (1992), "The development of markers for the big-five factor structure", *Journal of Personality and Social Psychology*, 59(6), 1216-1229.
- Graf, S., Kinshuk, & Liu, T. C. (2008). Identifying Learning Styles in Learning Management Systems by Using Indications from Students' Behaviour. *Eighth IEEE International Conference on Advanced Learning Technologies*, 482-486.
<http://doi.org/10.1109/ICALT.2008.84>

- Granovetter, M. S. (1973). The Strength of Weak Ties. *American Journal of Sociology*, 78(6), 1360-1380
- Grant, R. M. (1996). Toward a knowledge-based theory of the firm. *Strategic Management Journal*, 17, 109–122. <http://dx.doi.org/10.1002/smj.4250171110>
- Grasha, A. F., & Riechmann, H. (1989). Grasha-Riechmann Student Learning Style Scales.
- Gupta, B. (2008). Role of Personality in Knowledge Sharing and Knowledge Acquisition Behaviour. *Journal of the Indian Academy of Applied Psychology*, 34(1), 143–149
- Hair, J., Money, A., Page, M. & Samuouel, P. (2007). *Research Methods for Business*. Chichester, West Sussex: John Wiley & Sons Inc.
- Halawi, L., Aronson, J., & McCarthy, R. (2005). Resource-Based View of Knowledge Management for Competitive Advantage. *The Electronic Journal of Knowledge Management*, 3(2), pp. 75-86.
- Hazari, S., North, A., & Moreland, D. (2009). Investigating pedagogical value of wiki technology. *Journal of Information Systems Education*, 20(2), 187–198.

Holste, J. S., & Fields, D. (2010). Trust and tacit knowledge sharing and use, 14(1), 128–140. doi:10.1108/13673271011015615

Hooff, B. Van Den, & Ridder, J. a. De. (2004). Knowledge sharing in context: the influence of organizational commitment, communication climate and CMC use on knowledge sharing. *Journal of Knowledge Management*, 8(6), 117–130. doi:10.1108/13673270410567675

Hulley, S. B. (2007). Designing clinical research. Baltimore, MD: Lippincott, Williams & Wilkins.

Intermediair. (2012). Kennis delen lastig in bedrijven. Retrieved October 23, 2016, from <http://www.intermediairpw.nl/artikel/vakinformatie/302765/kennis-delen-lastig-in-bedrijven.html>

Ipe, M. (2003). Knowledge Sharing in Organization: A conceptual framework. *Human Resource Development Review*, 2(4), 337-359.

Jadin, T., Gnambs, T. and Batinic, B. (2013), “Personality traits and knowledge sharing in online communities”, *Computers in Human Behaviour*, 29(1), 210-216

Kamasak, R., & Bulutlar, F. (2010). The influence of knowledge sharing on innovation. *European Business Review*, 22(3), 306–317.

- Krejcie & Morgan (1970). Determining Sample Size for Research Activities. *Educational and Psychological Measurement*, pp. 607-610.
- Lee, J. N. (2001). The Impact of Knowledge Sharing, Organizational Capability and Partnership Quality on IS Outsourcing Success. *Information & Management*, 38, 323-335.
- Leinonen, T., & Durall, E. (2014), "Design thinking and collaborative learning", *Comunicar*, 21(42), 107-115.
- Lewis, J. and West, A. (2009), "Friending': London-based undergraduates' experience of Facebook", *New Media & Society*, 11(7), 1209-1229
- Lin, Q., Ye, D., & Bi, B. (2014). A Longitudinal and Multilevel Investigation on Factors Influencing Knowledge Sharing Behavior. *Journal of Management Policy and Practice*, 15(3), 88–101.
- Ma, Z., Qi, L. & Wang, K. (2008). Knowledge Sharing in Chinese Construction Project Team and it affecting Factors. *Chinese Management Studies*, 2(2), 97-108.
- Majid, S., Idio, C. D., Shuang, L., & Wen, Z. (2015). Preferences and Motivating Factors for Knowledge Sharing by Students. *Journal of Information & Knowledge Management*, 14(1), 1550004-1–9. <http://doi.org/10.1142/S0219649215500045>

- Mallasi, H., & Ainin, S. (2015). Investigating Knowledge Sharing Behaviour in Academic Environment. *Journal of Organizational Knowledge Management*, 2015(2015), 1–20. <http://doi.org/10.5171/2015.643253>
- Matzler, K., Renzl, B., Müller, J. and Herting, S. (2008), “Personality traits and knowledge sharing”, *Journal of Economic Psychology*, 29(3), 301-313
- McCrae, R. R., & Costa, P. T. (1987). Validation of five-factor model of personality across instruments and observers. *Journal of Personality and Social Psychology*, 82(1), 112-127.
- Mumtaz Begam Abdul Kadir. (2013). The Relationship Between Learning Style, Academic Major, And Academic Performance Of College Students. In *The Asian Conference on Education 2013*, 1–16. <http://doi.org/10.5032/jae.1999.01030>
- Munro, B.H. (2005). *Statistical methods for health care research* (5th ed.). Philadelphia, PA:Lippincott Williams & Wilkins.
- Nahapiet, J., & Ghoshal, S. (1998). Social capital, intellectual capital, and the organizational advantage. *Academy of Management Review*, 23, 242–266..
- NAS (2006), *Generation Y: The Millennials...Ready or Not, Here They Come*, National Academy of Sciences.

- Nazrin Izwan Mohd Noh. (2013). Trust , Reward And Trust, Reward And Knowledge Sharing Attitude As Antecedents Of Knowledge Sharing In The Public Sector.
- Nonaka, I., & Takeuchi, H. (1995). The knowledge creating company: How Japanese companies create the dynamics of innovation. New York: Oxford University Press.
- Nur Syazwani Mohd Nawi. (2009). *Knowledge Sharing Behavior among Academic Staff of Universiti Utara Malaysia. Universiti Utara Malaysia*. Retrieved from <http://etd.uum.edu.my/1773/>
- Paroutis and Saleh (2009) Determinants of knowledge sharing using Web 2.0 technologies, *Journal of Knowledge Management*, 13(4), 52-63.
- Raducanu, R.R. (2012), “Assessment of employees’ attitudes and intentions to share knowledge based on their individual characteristics”, Unpublished Master’s Dissertation Submitted to the Department of Strategic Management and Globalization, Copenhagen Business School, Copenhagen
- Rai, R. K. (2001). Knowledge management and organizational culture: A theoretical integrative framework. *Journal of Knowledge Management*, 15(5), 779-801.
- Rambe, P. (2012). Critical discourse analysis of collaborative engagement in Facebook postings, *Australasian Journal of Educational Technology*, 28(2), 295–314.

Riege, A. (2005). Three-dozen Knowledge Sharing Barriers Managers must consider. *Journal of Knowledge Management*, 9(3), 18-35.

Roberts, K. R. (2008). Using the Theory of Planned Behavior to Explore Restaurant Managers Support for Employee Food Safety. Unpublished doctoral dissertation, Kansas State University, Manhattan, Kansas.

Robson, R., Norris, D. M., Lefrere, P., Collier, G. & Mason, J. (2003). Share and share alike: The e-knowledge transformation comes to campus. *EDUCAUSE Review*.

Rosnani Bt. Daud. (2010). Knowledge Sharing among Students of Universiti Utara Malaysia (UUM). *Universiti Utara Malaysia*.

Salahuddin, N. (2009). Kualiti Perkhidmatan dan Hubungannya dengan Kepuasan Pelanggan di Hospital Sultanah Bahiyah, Alor Setar: Perbandingan antara Pesakit Luar dan Pesakit Dalam. Unpublished Master Degree, Universiti Utara Malaysia.

Setiarso, B. (2006). Knowledge Sharing with A New Dimension. *Knowledge Management International Conference & Exhibition (KMICE'06)*, Volume 1, Kedah.

Sekaran, U. (2003). *Research Methods for Business: A Skill Building Approach* (4th ed.). Wiley.

Shafieiyoun, S., & Safaei, A. M. (2013). Enhancing Knowledge Sharing Among Higher Education Students through Digital Game. *Journal of Knowledge Management, Economics and Information Technology*, III(3), 1–20.

Smith, S. D., & Caruso, J. B. (2010). The ECAR study of undergraduate students and information technology, 2010. : *EDUCAUSE Center for Applied Research* (ECAR). Available from : <http://www.educause.edu/ecar>.

Teh, P., Yong, C., Chong, C. and Yew, S. (2011), “Do the big five personality factors affect knowledge sharing behaviour? A study of Malaysian universities Malaysian”, *Journal of Library and Information Science*, 16(1), 47-62.

Tomsic, A. & Suthers, D. D. (2006). Discussion tool effects on collaborative learning and social network structure. *Educational Technology & Society*, 9(4), 63-77

Uma, S., & Rogers, B. (2009). *Research Methods for Business: A Skill Building Approach*. (5th ed), Wiley. 423.

Van de Vijver, F.J.R. and Leung, K. (2001), “Personality in cultural context: methodological issues”, *Journal of Personality*, 69(6), 1007-1031.

- Van de Vijver, F.J.R. and Rothman, S. (2004), "Assessment in multicultural groups: the South African case", *South African Journal of Industrial Psychology*, 30(4), 1-7.
- Walkers J.W. (2002). Research Knowledge Sharing and you. *Human Resources Planning*, 25 (2), 10-13.
- Wang, S. & Noe, R. A. (2010). Knowledge sharing: A review and directions for future research. *Human Resource Management Review*, 20(2), 115-131.
- Wang, S., Noe, R.A. and Wang, Z.M. (2011), "Motivating knowledge sharing in knowledge management systems: a quasi-field experiment", *Journal of Management*, 37(4). doi: 10.1177/0149206311412192.
- Wasko, M.M., and Faraj, S. (2005). Why should I share? Examining social capital and knowledge contribution in electronic networks of practice. *MIS Quarterly*, 29(1), 35-57.
- Wei, C., Choy, C., Chew, G., & Yen, Y. (2012), "Knowledge sharing patterns of undergraduate students", *Library Review*, 61(5), 327-344.
- Wesner, M.S. and Miller, T. (2008), "Boomers and Millenials have much in common", *Organizational Development*, 26(3), 89-96.

- Wickramasinghe, V., & Widyaratne, R. (2012). Effects of interpersonal trust, team leader support, rewards, and knowledge sharing mechanisms on knowledge sharing in project teams. *Vine*, 42(2), 214–236. doi:10.1108/03055721211227255
- Yazici, H. J. (2005). A study of collaborative learning style and team learning performance. *Education + Training*, 47(3), 216–229. <http://doi.org/10.1108/00400910510592257>
- Yeo, M. M. L. (2014). Social media and social networking applications for teaching and learning. *European Journal of Science and Mathematics Education*, 2(1), 53–62.
- Yi, J. (2009). A measure of knowledge sharing behavior: Scale development and validation. *Knowledge Management Research & Practice*, 7, 65–81.
- Yuen, T.J. and Majid, M.S. (2007), “Knowledge-sharing patterns of undergraduate students in Singapore”, *Library Review*, 56(6), 485-94.
- Yusof, Z. M., Ismail, M. B., Ahmad, K., & Yusof, M. M. (2012). Knowledge sharing in the public sector in Malaysia: a proposed holistic model. *Information Development*, 28(1), 43–54. doi:10.1177/0266666911431475

APPENDIX A

Letter of Application to Collect Data

The logo of Universiti Utara Malaysia (UUM) is a circular emblem on the left, featuring a stylized 'U' and 'M' with a book and a torch. The text 'UNIVERSITI UTARA MALAYSIA' is written around the top, and 'ILMU BUDI BAKTI' around the bottom. To the right of the emblem, the letters 'UUM' are written in a large, light gray font. Below this, the text 'Universiti Utara Malaysia' is written in a smaller, light gray font.



OTHMAN YEOP ABDULLAH
GRADUATE SCHOOL OF BUSINESS
Universiti Utara Malaysia
06010 UUM SINTOK
KEDAH DARUL AMAN
MALAYSIA



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Tel.: 604-928 7101/7113/7130
Faks (Fax): 604-928 7160
Laman Web (Web): www.oagbsb.uum.edu.my

KEDAH AMAN MAKMUR • BERSAMA MEMACU TRANSFORMASI

UUM/OYAGSB/R-4/4/1
24 March 2016

TO WHOM IT MAY CONCERN

Dear Sir/Madam

DATA COLLECTION

COURSE: Research Paper
COURSE CODE: BPMZ69912
LECTURER: Dr. Chong Yen Wan

This is to certify that the following is a postgraduate student from the OYA Graduate School of Business, Universiti Utara Malaysia. He is pursuing the above mentioned course which requires him to undertake an academic study and prepare an assignment. The details are as follows:

NO.	NAME	MATRIC NO.
1.	Ng Shu Kae	818952


In this regard, I hope that you could kindly provide assistance and cooperation for him to successfully complete the assignment given. All the information gathered will be strictly used for academic purposes only.

Your cooperation and assistance is very much appreciated.

Thank you.

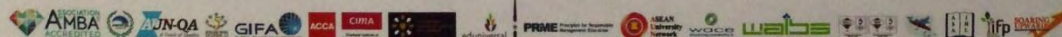
"KNOWLEDGE, VIRTUE, SERVICE"

Yours faithfully


NOORHANA BINTI RAMLI
Social Research Officer
for Dean
Othman Yeop Abdullah Graduate School of Business

c.c - Student's File (818952)

Universiti Pengurusan Terkemuka
The Eminent Management University



APPENDIX B

QUESTIONNAIRE





THE INFLUENCE OF COLLABORATIVE LEARNING STYLE, RECIPROCITY AND EXTROVERSION ON KNOWLEDGE SHARING VIA SOCIAL MEDIA AMONG UUM UNDERGRADUATES

Dear friends,

I am a student of Master of Science (Management) from Othman Yeap Abdullah Graduate School of Business (OYAGSB), Universiti Utara Malaysia (UUM). I am conducting a study on “The influence of collaborative learning style, reciprocity, and extroversion on knowledge sharing via social media”. The study is aimed to examine the relationship between collaborative learning style, reciprocity and extroversion affects their willingness to share knowledge via social media with other students. This survey is comparative study. The respondents are undergraduate students from UUM.

This study will be used as input for my dissertation. All information provided by you will be kept confidential. Kindly indicate your response by selecting the most appropriate choices.

If you have any queries regarding this research, please contact me by email (shukae91@gmail.com) or whatapps (016-5996642).

Your precious time and valuable participation will be a great contribution towards the noble cause of knowledge creation.

Thank you

Best Regards,

Ng.Shu.Kae

Ng Shu Kae (Matric no: 818952)



PENGARUH GAYA PEMBELAJARAN KOLABORASI, SALINGAN DAN EXTROVERSION TERHADAP PERKONGSIAN PENGETAHUAN MELALUI MEDIA SOSIAL DI KALANGAN MAHASISWA UUM

Rakan-rakan sekalian,

Saya seorang pelajar Sarjana Sains Pengurusan dari Universiti Utara Malaysia (UUM). Saya sedang melakukan penyelidikan bertajuk “Gaya Pembelajaran kolaborasi, salingan dan extroversion terhadap pengkongsian pengetahuan gelagat melalui media sosial”. Kajian ini untuk mengkaji hubungan antara gaya pembelajaran kolaborasi pelajar-pelajar UUM, salingan pelajar UUM dan extroversion terhadap pengkongsian pengetahuan melalui social media. Kajian ini merupakan kajian perbandingan daripada pelajar-pelajar Sarjana Muda di UUM.

Kajian ini menjadikan input kepada tesis saya. Semua maklumat diberikan oleh anda akan disimpan sulit untuk kajian ini sahaja. Sila beri kerjasama untuk menjawab soalan-soalan dengan teliti terhadap pilihan yang sedia ada.

Sebarang persoalan terhadap kajian ini, sila menghubungi saya samada melalui email (shukae91@gmail.com) ataupun whatapps (016-5996642).

Penyertaan dan sumbangan anda memberi arah tujuan yang mulia penciptaan pengetahuan. Sekian terima kasih.

Yang Benar,

Ng Shu Kae

Ng Shu Kae (Matric no: 818952)

PART A: RESPONDENT BIODATA / BAHAGIAN A: BIODATA RESPONDEN

Please tick (/) the most suitable answer. / *Sila tanda (/) jawapan paling sesuai.*

1. Please indicate your gender/ *Sila nyatakan jantina anda*

☐ Male/ *Lelaki* ☐ Female/ *Perempuan*

2. Please indicate your age / *Sila nyatakan umur anda:*

☐ Below 20 years old/ *20 tahun ke-bawah*

☐ 20 – 25 years old/ *20 hingga 25 tahun*

☐ 26 – 30 years old/ *26 hingga 30 tahun*

☐ 30 above/ *30 tahun ke-atas*

3. Please indicate your education level / *Sila nyatakan tahap pendidikan anda:*

☐ Bachelor's degree/ *Sarjana Muda*

☐ Master degree/ *Sarjana*

☐ PhD/ *Doktor Falsafah*

4. Please identify your college / *Sila nyatakan kolej anda:*

☐ College of Business (COB) / *Kolej Perniagaan*

☐ College of Arts and Sciences (CAS)/ *Kolej Sains dan Sastera*

☐ College of Law, Government and International Studies (COLGIS)/ *Kolej Undang-undang, Kerajaan dan Pengajian Antarabangsa*

5. Race / *Bangsa:*

☐ Malay/ *Melayu*

☐ Chinese/ *Cina*

☐ India/ *India*

☐ Others/ *Lain-lain*

6. Nationality / *Warganegara:*

☐ Malaysian/ *Penduduk Malaysia*

☐ Non- Malaysian / *Penduduk luar Malaysia*

7. Religion / *Agama*:

☐ Islam / *Muslim*

☐ Buddha/ *Buddha*

☐ Christian/ *Christian*

☐ Catholic/ *Katolik*

☐ Hindu/ *Hindu*

☐ Others/ *Lain-lain*



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**PART B: STUDENT KNOWLEDGE SHARING BEHAVIOR / BAHAGIAN B:
PELAJAR PERKONGSIAN GELAGAT**

Please circle the number to each statement to indicate the extent to which you agree or disagree with that statement.

Sila bulatkan nombor untuk setiap pernyataan untuk menunjukkan sejauh mana anda bersetuju atau tidak bersetuju dengan kenyataan itu.

Strongly Disagree <i>Tidak setuju Sangat</i>	Disagree <i>Tidak setuju sedikit</i>	Undecide <i>Tidak pasti</i>	Agree <i>Setuju sedikit</i>	Strongly Agree <i>Amat Setuju</i>
1	2	3	4	5

	Items					
1.	I frequently visit other social media like facebook/whatsapp to get information and knowledge. <i>Saya kerap melawat media sosial lain seperti facebook /whatsapp untuk menambah ilmu dan maklumat.</i>	1	2	3	4	5
2.	I frequently leave my feedback/comments on other social media like facebook/whatsapp. <i>Saya sering meninggalkan maklum balas / komen saya di media sosial lain seperti facebook /whatsapp.</i>	1	2	3	4	5
3.	I spend some time on my facebook/whatsapp to update new information.	1	2	3	4	5

	<i>Saya meluangkan masa di facebook/whatapps saya untuk mengemas maklumat terkini.</i>					
4.	I update my facebook/whatapps regularly. <i>Saya kerap mengemaskini facebook/whatapps saya.</i>	1	2	3	4	5
5.	I frequently share my experience or knowledge with other whatapps/facebook users. <i>Saya sering berkongsi pengalaman atau pengetahuan saya dengan pengguna whatapps / facebook lain.</i>	1	2	3	4	5
6.	I provide my knowledge and useful information at the request of other whatapps/facebook users. <i>Saya menyediakan pengetahuan saya dan maklumat yang berguna atas permintaan pengguna whatapps / facebook lain.</i>	1	2	3	4	5
7.	I share my knowledge from my education or training with other whatapps/ facebook users. <i>Saya berkongsi pengetahuan saya dari pendidikan atau latihan dengan pengguna whatapps / facebook lain.</i>	1	2	3	4	5
8.	I post useful documents or files on my whatapps/facebook profile to share with other	1	2	3	4	5

	<p>whatapps/ facebook users.</p> <p><i>Saya menyiarkan dokumen atau fail yang berguna di whatapps /facebook profil saya untuk berkongsi dengan pengguna whatapps / facebook lain.</i></p>					
--	---	--	--	--	--	--



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PART C: COLLABORATIVE LEARNING STYLE / BAHAGIAN C: GAYA PEMBELAJARAN KOLABORATIF

Please circle the number to each statement to indicate the extent to which you agree or disagree with that statement.

Sila bulatkan nombor untuk setiap pernyataan untuk menunjukkan sejauh mana anda bersetuju atau tidak bersetuju dengan kenyataan itu.

Strongly Disagree <i>Tidak setuju Sangat</i>	Moderately Disagree <i>Tidak setuju sedikit</i>	Undecide <i>Tidak pasti</i>	Moderately Agree <i>Setuju sedikit</i>	Strongly Agree <i>Amat Setuju</i>
1	2	3	4	5

	Items					
1.	Working with other students on class projects is something I enjoy. <i>Saya bernikmati apabila bekerjasama dengan pelajar-pelajar lain dalam projek kelas.</i>	1	2	3	4	5
2.	I enjoy discussing my ideas about course content with other students. <i>Saya menikmati semasa membincangkan idea-idea saya tentang kandungan kursus dengan pelajar lain.</i>	1	2	3	4	5
3..	I enjoy hearing what other students think about issues raised in class. <i>Saya suka mendengar apa yang pelajar-pelajar lain berfikir tentang isu-isu yang dibangkitkan di dalam kelas.</i>	1	2	3	4	5
4.	Students can learn more by sharing their ideas with each other. <i>Pelajar boleh mengetahui lebih lanjut dengan berkongsi idea-idea mereka antara satu sama lain.</i>	1	2	3	4	5
5.	I like to study for tests with other students.	1	2	3	4	5

	<i>Saya suka belajar dengan pelajar-pelajar lain untuk ujian.</i>					
6.	The ideas of other students help me to understand course material. <i>Idea-idea pelajar-pelajar lain membantu saya untuk memahami bahan kursus.</i>	2	2	3	4	5
7.	An important part of taking courses is learning to get along with other people. <i>Amat penting bagi mengambil kursus adalah belajar untuk bergaul dengan orang lain.</i>	1	2	3	4	5
8.	Learning should be a cooperative effort between students and faculty. <i>Pembelajaran perlu menjadi usaha kerjasama antara pelajar dan fakulti</i>	1	2	3	4	5
9.	I let other students borrow my notes when they ask for them. <i>Saya biarkan pelajar-pelajar lain meminjam nota saya apabila mereka meminta.</i>	1	2	3	4	5
10.	Participating in small group activities in class is something I enjoy. <i>Mengambil bahagian dalam aktiviti-aktiviti kumpulan kecil di dalam kelas adalah sesuatu yang saya menikmati.</i>	1	2	3	4	5

PART D: REPROCITY/ BAHAGIAN D: SALINGAN

Please circle the number to each statement to indicate the extent to which you agree or disagree with that statement.

Sila bulatkan nombor untuk setiap pernyataan untuk menunjukkan sejauh mana anda bersetuju atau tidak bersetuju dengan kenyataan itu.

Disagree Strongly <i>Tidak setuju Sangat</i>	Disagree a little <i>Tidak setuju sedikit</i>	Neither agree or nor disagree <i>Tidak pasti</i>	Agree a little <i>Setuju sedikit</i>	Agree Strongly <i>Amat Setuju</i>
1	2	3	4	5

	Items					
1.	When I share information through whatapps / facebook, I believe that my questions will be answered in the future. <i>Apabila saya berkongsi maklumat melalui whatapps / facebook, saya percaya bahawa soalan-soalan saya akan dijawab dalam masa akan datang.</i>	1	2	3	4	5
2.	I believe that other whatapps/ facebook users I interact with would help me if I was in need. <i>Saya percaya bahawa whatapps lain pengguna / facebook saya berinteraksi dengan akan membantu saya jika saya adalah memerlukan</i>	1	2	3	4	5
3.	When I share my knowledge and information through whatapps/ facebook, I expect some other whatapps/	1	2	3	4	5

facebook users to respond when I am in need. <i>Apabila saya berkongsi pengetahuan dan maklumat saya melalui whatapps / facebook, saya mengharapkan beberapa pengguna whatapps / facebook untuk bertindak balas apabila saya memerlukan.</i>					
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PART E: EXTROVERSION / BAHAGIAN E: EXTROVERSION

Please circle the number to each statement to indicate the extent to which you agree or disagree with that statement.

Sila bulatkan nombor untuk setiap pernyataan untuk menunjukkan sejauh mana anda bersetuju atau tidak bersetuju dengan kenyataan itu.

Disagree Strongly <i>Tidak setuju Sangat</i>	Disagree a little <i>Tidak setuju sedikit</i>	Neither agree or nor disagree <i>Tidak pasti</i>	Agree a little <i>Setuju sedikit</i>	Agree Strongly <i>Amat Setuju</i>
1	2	3	4	5

No.	Item					
1.	I see myself as someone who is talkative. <i>Saya melihat diri saya sebagai seorang yang suka bercakap.</i>	1	2	3	4	5
2.	I see myself as someone who is full of energy. <i>Saya melihat diri saya sebagai seorang</i>	1	2	3	4	5

3.	<p><i>yang penuh dengan tenaga.</i></p> <p>I see myself as someone who generates a lot of enthusiasm.</p> <p><i>Saya melihat diri saya sebagai seorang yang merangsangkan semangat.</i></p>	1	2	3	4	5
4.	<p>I see myself as someone who tends to be quiet.</p> <p><i>Saya melihat diri saya sebagai seorang yang pendiam.</i></p>	1	2	3	4	5
5.	<p>I see myself as someone who has an assertive personality.</p> <p><i>Saya melihat diri saya sebagai seorang yang mempunyai personaliti yang tegas.</i></p>	1	2	3	4	5
6.	<p>I see myself as someone who is sometimes shy, inhibited.</p> <p><i>Saya melihat diri saya sebagai seorang yang malu, penghalang.</i></p>	1	2	3	4	5
7.	<p>I see myself as someone who is outgoing, sociable.</p> <p><i>Saya melihat diri saya sebagai seorang yang bergaula dan bersosial dengan orang lain.</i></p>	1	2	3	4	5

END

TAMAT

THANK YOU FOR YOUR COORPORATION

TERIMA KASIH ATAS KERJASAMA

APPENDIX C

Results from SPSS Tests

- Descriptive Analysis
- Reliability Analysis
- Normality Analysis
- Descriptive Analysis
- T-test Analysis
- ANOVA Analysis
- Correlation Analysis
- Hierarchical Regression Analysis



Descriptive Analysis

GENDER

	Frequency	Percentage (%)
MALE	91	25.10
FEMALE	272	74.90
Total	363	100.0

AGE

	Frequency	Percentage (%)
<20	64	17.60
20-25	299	82.40
26-30	0	0.00
Total	363	100.00

EDUCATION_LEVEL

	Frequency	Percentage (%)
DEGREE	363	100.00
MASTER DEGREE	0	0
PHD	0	0
Total	363	100.0

COLLEGE

	Frequency	Percentage (%)
COB	188	51.80
CAS	92	25.30
COLGIS	83	22.90
Total	363	100.0

RACE

	Frequency	Percentage (%)
MALAY	218	60.10
CHINESE	122	33.60
INDIA	10	2.80
OTHERS	13	3.60
Total	363	100.0

NATIONALITY

	Frequency	Percentage (%)
MALAYSIAN	355	97.80
NON MALAYSIAN	8	2.20
Total	363	100.0

RELIGION

	Frequency	Percentage (%)
ISLAM	226	62.30
BUDDHA	115	31.70
CHRISTIAN	6	1.70
CATHOLIC	1	0.30
HINDU	10	2.80
OTHERS	5	1.40
Total	363	100.0



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Reliability Analysis

Knowledge sharing behavior (KSB)

Reliability Statistics

Cronbach's Alpha	N of Items
.74	8

Collaborative learning style (CLS)

Reliability Statistics

Cronbach's Alpha	N of Items
.83	10

Reciprocity (REC)

Reliability Statistics

Cronbach's Alpha	N of Items
.73	3

Extroversion (EXT)

Reliability Statistics

Cronbach's Alpha	N of Items
.61	7

Normality Analysis

Descriptive Statistics

Variables	N	Skewness	Kurtosis
Knowledge sharing behavior (KSB)	363	-0.21	0.14
Collaborative learning style (CLS)	363	-0.57	0.95
Reciprocity (REC)	363	-0.68	0.75
Extraversion (EXT)	363	-.014	0.70
Valid N (listwise)	363		



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Anova Analysis

Anova for College

Descriptives

KSB

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
COB	188	3.4029	.70002	.05105	3.3022	3.5036	1.50	4.88
CAS	92	3.4266	.67050	.06990	3.2878	3.5655	1.50	4.88
COLGIS	83	3.4714	.79999	.08781	3.2967	3.6461	1.38	6.00
Total	363	3.4246	.71545	.03755	3.3507	3.4984	1.38	6.00

Test of Homogeneity of Variances

KSB

Levene Statistic	df1	df2	Sig.
.407	2	360	.666

ANOVA

KSB

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.270	2	.135	.263	.769
Within Groups	185.025	360	.514		
Total	185.295	362			

Anova for Religion

Test of Homogeneity of Variances

KSB

Levene Statistic	df1	df2	Sig.
1.280 ^a	4	357	.278

a. Groups with only one case are ignored in computing the test of homogeneity of variance for KSB.

Descriptives

KSB

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
ISLAM	225	3.5044	.68779	.04585	3.4141	3.5948
BUDDHA	115	3.2489	.75537	.07044	3.1094	3.3885
CHRISTIAN	6	2.9583	.54582	.22283	2.3855	3.5311
CATHOLIC	2	3.5625	1.32583	.93750	-8.3496	15.4746
HINDU	10	3.6625	.51724	.16356	3.2925	4.0325
OTHERS	5	3.9000	.38931	.17410	3.4166	4.3834
Total	363	3.4246	.71545	.03755	3.3507	3.4984

ANOVA

KSB

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	9.010	5	1.802	3.649	.003
Within Groups	176.285	357	.494		
Total	185.295	362			

Multiple Comparisons

Dependent Variable: KSB

Tukey HSD

(I) RELIGION	(J) RELIGION	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
ISLAM	BUDDHA	.24771	.08095	.029	.0158	.4797
	CHRISTIAN	.53718	.29087	.473	-.2962	1.3706
	CATHOLIC	-.40448	.31794	.800	-1.3155	.5065
	HINDU	-.16698	.22727	.978	-.8182	.4842
	OTHERS	-.40448	.31794	.800	-1.3155	.5065
BUDDHA	ISLAM	-.24771	.08095	.029	-.4797	-.0158
	CHRISTIAN	.28947	.29449	.923	-.5543	1.1333
	CATHOLIC	-.65219	.32125	.327	-1.5727	.2683
	HINDU	-.41469	.23188	.475	-1.0791	.2497
	OTHERS	-.65219	.32125	.327	-1.5727	.2683
CHRISTIAN	ISLAM	-.53718	.29087	.437	-1.3706	.2962
	BUDDHA	-.28947	.29449	.923	-1.1333	.5543
	CATHOLIC	-.94167	.42574	.317	-2.1615	.2782
	HINDU	-.70417	.36308	.370	-1.7445	.3361
	OTHERS	-.94167	.42574	.253	-2.1615	.2782
CATHOLIC	ISLAM	.40448	.31794	.782	-.5065	1.3155
	BUDDHA	.65219	.32125	.485	-.2683	1.5727
	CHRISTIAN	.94167	.42574	.317	-.2782	2.1615
	HINDU	.23750	.38510	.956	-.8659	1.3409
	OTHERS	.00000	.44468	.996	-1.2741	1.2741

HINDU	ISLAM	.16698	.22727	.965	-.4842	.8182
	BUDDHA	.41469	.23188	.453	-.2497	1.0791
	CHRISTIAN	.70417	.36308	.370	-.3361	1.7445
	CATHOLIC	-.23750	.38510	.956	-1.3409	.8659
	OTHERS	-.23750	.38510	.997	-1.3409	.8659
OTHERS	ISLAM	.40448	.31794	.822	-.5065	1.3155
	BUDDHA	.65219	.32125	.333	-.2683	1.5727
	CHRISTIAN	.94167	.42574	.253	-.2782	2.1615
	CATHOLIC	.00000	.44468	.996	-1.2741	1.2741
	HINDU	.23750	.38510	.997	-.8659	1.3409

*. The mean difference is significant at the 0.05 level.



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Anova for Race

KSB

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Mean			
					Lower Bound	Upper Bound		
MALAY	220	3.4938	.69901	.04713	3.4009	3.5866	1.50	6.00
CHINESE	122	3.2582	.74356	.06732	3.1249	3.3915	1.38	4.75
INDIA	10	3.6625	.51724	.16356	3.2925	4.0325	3.00	4.50
OTHERS	11	3.6705	.57628	.17376	3.2833	4.0576	2.75	4.38
Total	363	3.4246	.71545	.03755	3.3507	3.4984	1.38	6.00

Test of Homogeneity of Variances

KSB

Levene Statistic	df1	df2	Sig.
.843	3	359	.471

ANOVA

KSB

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.661	3	1.887	3.771	.011
Within Groups	179.634	359	.500		
Total	185.295	362			

Multiple Comparisons

Dependent Variable: KSB

Tukey HSD

(I) RACE	(J) RACE	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
MALAY	CHINESE	.23555	.07985	.018	.0295	.4417
	INDIA	-.16875	.22872	.882	-.7591	.4216
	OTHERS	-.17670	.21855	.850	-.7408	.3874
CHINESE	MALAY	-.23555	.07985	.018	-.4417	-.0295
	INDIA	-.40430	.23268	.306	-1.0049	.1963
	OTHERS	-.41226	.22269	.251	-.9870	.1625
INDIA	MALAY	.16875	.22872	.882	-.4216	.7591
	CHINESE	.40430	.23268	.306	-.1963	1.0049
	OTHERS	-.00795	.30907	1.000	-.8057	.7898
OTHERS	MALAY	.17670	.21855	.850	-.3874	.7408
	CHINESE	.41226	.22269	.251	-.1625	.9870
	INDIA	.00795	.30907	1.000	-.7898	.8057

*. The mean difference is significant at the 0.05 level.

Correlation

		Correlations			
		KSB	CLS	REC	EXT
KSB	Pearson Correlation	1	.380**	.434**	.324**
	Sig. (2-tailed)		.000	.000	.000
	N	363	363	363	363
CLS	Pearson Correlation	.380**	1	.401**	.373**
	Sig. (2-tailed)	.000		.000	.000
	N	363	363	363	363
REC	Pearson Correlation	.434**	.401**	1	.291**
	Sig. (2-tailed)	.000	.000		.000
	N	363	363	363	363
EXT	Pearson Correlation	.324**	.373**	.291**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	363	363	363	363

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

Regression Analysis

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	EXT, REC, CLS ^b	.	Enter

a. Dependent Variable: KSB

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.510 ^a	.260	.254	.61787

a. Predictors: (Constant), EXT, REC, CLS

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	48.242	3	16.081	42.122	.000 ^b
	Residual	137.053	359	.382		
	Total	185.295	362			

a. Dependent Variable: KSB

b. Predictors: (Constant), EXT, REC, CLS

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.479	.297		1.612	.108
CLS	.265	.070	.196	3.776	.000
REC	.287	.047	.308	6.131	.000
EXT	.240	.073	.162	3.263	.001

a. Dependent Variable: KSB



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