

**KNOWLEDGE SHARING BEHAVIOUR AMONG MALAYSIAN
STUDENTS**

HISHAM IBRAHIM HUSSEIN MALLASI

**FACULTY OF BUSINESS AND ACCOUNTANCY
UNIVERSITY OF MALAYA
KUALA LUMPUR**

2013

**KNOWLEDGE SHARING BEHAVIOUR AMONG MALAYSIAN
STUDENTS**

HISHAM IBRAHIM HUSSEIN MALLASI

**THESIS SUBMITTED IN FULFILMENT OF THE REQUIREMENTS
FOR THE DEGREE OF DOCTOR OF PHILOSOPHY**

**FACULTY OF BUSINESS AND ACCOUNTANCY
UNIVERSITY OF MALAYA
KUALA LUMPUR**

2013

UNIVERSITY MALAYA

ORIGINAL LITERARY WORK DECLARATION

Name of Candidate: Hisham Ibrahim Hussein Mallasi

Registration/Matric No: CHA 055029

Name of Degree: PhD

Title of Thesis: Knowledge sharing behaviour among Malaysian students

Field of Study: Knowledge Management

I do solemnly and sincerely declare that:

- (1) I am the sole author /writer of this Work;
- (2) This Work is original;
- (3) Any use of any work in which copyright exists was done by way of fair dealing and for permitted purposes and any excerpt or extract from, or reference to or reproduction of any copyright work has been disclosed expressly and sufficiently and the title of the Work and its authorship have been acknowledged in this work;
- (4) I do not have any actual knowledge nor do I ought reasonably to know that the making of this work constitutes an infringement of any copyright work;
- (5) I hereby assign all and every rights in the copyright to this Work to the university of Malaya ("UM"), who henceforth shall be owner of the copyright in this Work and that any reproduction or use in any form or by any means whatsoever is prohibited without the written consent of UM have been first had and obtained;
- (6) I am fully aware that if in the course of making this Work I have infringed any copyright whether intentionally or otherwise, I may be subject to legal action or any other action as may be determined by UM.

Candidate's Signature

Date.....

Subscribed and solemnly declared before,

Witness's Signature

Date.....

Name:

Designation:

ABSTRAK

Perkongsian pengetahuan adalah interaksi sosial di kalangan individu. Orang ramai berkongsi pengetahuan kerana sebab-sebab tertentu. Kajian lepas kebanyakannya tertumpu pada sistem ganjaran kewangan. Bagaimanapun ianya mungkin benar bagi individu yang bekerja dalam organisasi. Walau bagaimanapun, tidak banyak data empirikal yang menganalisis mengapa pelajar berkongsi ilmu memandangkan ianya tidak melibatkan ganjaran berbentuk kewangan. Oleh itu, kajian ini bertujuan untuk menyiasat pengaruh faktor bukan kewangan (seperti suka membantu orang lain, reputasi, keberkesanan diri, interpersonal amanah, merendah diri) ke atas tingkah laku perkongsian pengetahuan di kalangan pelajar pasca siswazah. Di samping itu, kajian ini juga menganalisis peranan keagamaan pada tingkah laku perkongsian pengetahuan dan faktor bukan kewangan.

Soal selidik digunakan untuk mengumpul data empirical. Borang soal selidik diedarkan kepada pasca siswazah berdasarkan kaedah persampelan kuota untuk memastikan kerepresentatifan populasi yang disasarkan. Sebanyak 1683 soal selidik telah diedarkan kepada enam universiti awam di Lembah Klang. Walau bagaimanapun hanya 1267 soalselidik yang lengkap diterima dan digunakan untuk analisis.

Keputusan analisis menunjukkan beberapa penemuan baru. Satu, didapati bahawa faktor merendah diri telah pecahkan kepada dua bahagian dan dinamakan semula sebagai merendah diri umum dan merendah diri ilmiah sedangkan kajian sebelumnya adalah merendah diri secara umum. Dua, faktor bukan kewangan seperti suka membantu orang lain, keberkesanan diri, amanah interpersonal mempengaruhi perkongsian pengetahuan manakala reputasi tidak mempunyai kaitan. Di samping itu, kajian ini juga mendapati keagamaan memainkan peranan yang sederhana dalam hubungan antara faktor-faktor bukan kewangan dan tingkah laku. pengetahuan perkongsian

ABSTRACT

Knowledge sharing is a social interaction among individuals. People share knowledge for many reasons. Past studies focused mainly on reward system particularly monetary. This may be true for individuals working in organizations. However, there have not been many empirical data that analyses why individual students share knowledge as there is no monetary rewards at stake. Thus, this study aims to investigate the influence of the non-monetary factors (such as enjoy helping others, reputation, self efficacy, interpersonal trust, humility) on knowledge sharing behavior among postgraduate students. In addition, the study also analyses the role of religiosity on knowledge sharing behavior and non monetary factors.

Empirical data was collected using a survey questionnaire. The questionnaire was distributed to the postgraduates based on quota sampling method to ensure representativeness of the targeted population. A total of 1683 questionnaires were distributed to six public universities in the Klang Valley. However only 1267 were complete and used for analysis.

The results of the analysis illustrated some new findings. One, it was found that humility was factorised into two and was renamed as general humility and scholarly humility whereas previous study is based on humility in general. Two, non monetary factors such as enjoy helping others, self efficacy, interpersonal trust have a significant impact on knowledge sharing while reputation does not. In addition, it was discovered that religiosity plays a moderating role in the relationship between non-monetary factors and knowledge sharing behaviour.

ACKNOWLEDGEMENTS

Praise is to Allah that his grace is righteous. To begin with, I would like to convey my honest gratitude to Allah the Almighty for enabling me to complete this study. Then, I would like to express my gratitude to those persons who have provided me with their valuable advice and assistance along the way of this doctoral programme.

Above all, I would like to convey my deepest appreciation, thanks and sincere gratitude to my unique supervisor, Professor Ainin Binti Sulaiman for her continuous encouragement, useful comments, and gentle supervision. I believe this study would not have been completed without her helpful guidance and close follow-up through the duration of this study.

I would also like to extend my gratefulness to those who provided their valuable advice and support to me, especially my colleague, M. Al-Baity, for his kind advice and assistance in using SPSS statistical package. Thank you to Sister Che Manira Che Hashim from the graduate school of business Malaya University City campus and Sister Noraerna Binti Abdul Rahim from Business and Accountancy Faculty for their polite assistance, and to the other personnel staff for being a great help. Many thanks also to the academic staff of Business and Accountancy Faculty Malaya University for their support which I received during my study.

Last but not least, I would like to acknowledge my beloved mother, brothers, sister, wife and my children for their continuous moral and monetary support and for their patience and understanding during my permanent absences in my period of study, may Allah bless them all.

TABLE OF CONTENTS

Original Literary Work Declaration.....	ii
Abstract of the Thesis in Malay Language.....	iii
Abstract of the Thesis in English Language.....	iv
Acknowledgements.....	v
Table of Contents.....	vi
List of Figures.....	x
List of Tables.....	xi
List of Abbreviations.....	xiii
CHAPTER ONE INTRODUCTION.....	1
1.1 Background.....	1
1.2 Statement of the Problem.....	2
1.3 Purpose of the Study.....	5
1.4 Research Questions.....	7
1.5 Significance of the Study.....	7
1.6 Definition of Terms.....	8
1.6.1 Knowledge Sharing Behaviour.....	8
1.6.2 Non-Monetary Factors.....	9
1.6.3 Enjoyment of Helping Others.....	9
1.6.4 Reputation.....	9
1.6.5 Self-Efficacy.....	9
1.6.6 Interpersonal Trust.....	9
1.6.7 Humility.....	9
1.6.8 Religiosity.....	10
1.7 Research Methodology.....	10
1.8 Thesis Organisation.....	10
CHAPTER TWO REVIEW OF THE LITERATURE.....	12
2.1 Introduction.....	12
2.2 Knowledge.....	12
2.3 Knowledge Vs Information.....	14
2.4 Tacit and Explicit Knowledge.....	15
2.5 Knowledge Management.....	16
2.6 Knowledge Sharing Behaviour.....	19
2.6.1 Definitions of Knowledge Sharing Behaviour.....	19
2.6.2 Models of Knowledge Sharing Behaviour.....	21
2.7 Motivation of Knowledge Sharing Behaviour.....	35
2.8 Non-Monetary Factors Influence Knowledge Sharing Behaviour.....	36
2.8.1 Enjoyment of Helping Others.....	37
2.8.2 Reputation.....	39
2.8.3 Self-Efficacy.....	43
2.8.4 Interpersonal Trust.....	47
2.8.5 Humility.....	53
2.8.6 Religiosity.....	59
2.9 Theories Related to Knowledge Sharing Behaviour.....	66
2.9.1 Social Exchange Theory.....	67
2.9.2 Social Cognitive Theory.....	68
2.9.3 Social Capital Theory.....	69
2.9.4 Theory of Virtue.....	69
2.10 Research Gaps.....	70

CHAPTER THREE METHODOLOGY	72
3.1 Introduction	72
3.2 Research Philosophy	73
3.3 Research Framework.....	75
3.4 Research Hypotheses Development.....	77
3.4.1 Enjoyment of Helping Others	77
3.4.2 Reputation	79
3.4.3 Self-Efficacy	79
3.4.4 Interpersonal Trust	80
3.4.5 Humility	81
3.4.6 Religiosity	83
3.5 Research Methods	87
3.6 Research Instrument Development	88
3.7 Research Constructs Operational Definitions	89
3.7.1 Knowledge Sharing Behaviour Scale Items.....	89
3.7.2 Enjoyment of Helping Others Scale Items.....	90
3.7.3 Reputation Scale Items.....	91
3.7.4 Self-Efficacy Scale Items.....	91
3.7.5 Interpersonal Trust Scale Items.....	92
3.7.6 Humility Scale Items.....	93
3.7.7 Religiosity Scale Items.....	94
3.8 Sampling Design	95
3.8.1 Target Population	96
3.8.2 Sampling Technique (Quota)	97
3.8.3 Sampling Frame	98
3.8.4 Sample Size.....	98
3.9 Questionnaire Structure.....	100
3.10 Validation.....	101
3.10.1 Face Validity	101
3.11 Pilot Study.....	102
3.12 Reliability Test.....	103
3.13 Data Collection.....	104
3.14 Response Rate	105
3.15 Data Analysis	106
3.16 Conclusion	106
 CHAPTER FOUR ANALYSIS AND RESULTS	 108
4.1 Introduction	108
4.2 Demographic Analysis	109
4.2.1 Gender	109
4.2.2 Age	110
4.2.3 Country of Origin.....	110
4.2.4 Ethnicity	111
4.2.5 Religion	112
4.2.6 Education.....	113
4.2.7 Crosstabulation.....	113
4.3 Reliability Test.....	115
4.4 Exploratory Factor Analysis	116
4.5 Constructs Reliability Assessment.....	120
4.6 Hypotheses Testing Procedures and Techniques	121
4.6.1 Pearson's Correlation	122
4.6.2 Normality	123

4.6.3 Multiple Linear Regression.....	124
4.6.4 Coefficient of Multiple Determinations.....	125
4.6.5 Moderator/ Interaction Effect.....	126
4.6.6 Multicollinearity.....	127
4.6.7 T-test.....	128
4.7 Pearson Correlation Analysis.....	128
4.8 Normality Test.....	129
4.9 Testing Research Hypotheses.....	133
4.9.1 Testing Research Hypothesis (H1).....	133
4.9.2 Testing Research Hypothesis (H2).....	136
4.9.3 Testing Research Hypothesis (H3) Related to Ethnic Groups.....	143
4.9.3.1 Interaction Effect of REL*Non-Monetary Factors*Malay Ethnic....	145
4.9.3.2 Interaction Effect of REL*Non-Monetary Factors*Chinese Ethnic.	151
4.9.3.3 Interaction Effect of REL*Non-Monetary Factors*Indian Ethnic....	157
4.9.3.4 Interaction Effect of REL*Non-Monetary Factors*Others Ethnic ...	164
4.9.4 Testing Research Hypothesis (H4) Related to Gender.....	171
4.9.4.1 Interaction Effect of REL*Non-Monetary Factors*Male.....	171
4.9.4.2 Interaction Effect of REL*Non-Monetary Factors*Female.....	179
4.9.5 Testing Research Hypothesis 5.....	186
4.10 Results of Hypotheses Testing.....	188
4.10.1 Result of Testing Hypothesis 1.....	188
4.10.2 Results of Testing Hypothesis 2.....	188
4.10.3 Result of Testing Hypothesis 3.....	189
4.10.4 Results of Testing Hypotheses 4.....	190
4.10.5 Results of Testing Hypothesis 5.....	191
4.11 Summary of the Results.....	192
CHAPTER FIVE DISCUSSION.....	194
5.1 Introduction.....	194
5.2 Non-Monetary Factors Influencing Knowledge Sharing.....	194
5.2.1 Enjoyment of Helping Others.....	195
5.2.2 Reputation.....	196
5.2.3 Self-Efficacy.....	197
5.2.4 Interpersonal Trust.....	197
5.2.5 Scholar Humility.....	198
5.2.6 General Humility.....	199
5.3 Moderator Role of Religiosity.....	200
5.4 Interaction Effect of Religiosity.....	201
5.4.1 Interaction Effect of Religiosity with Ethnicity.....	201
5.4.2 Interaction Effect of Religiosity with Gender.....	203
5.4.2.1 Interaction Effect of Religiosity with the Male Gender.....	203
5.4.2.2 Interaction Effect of Religiosity with the Female Gender.....	205
5.5 Difference between Malaysian and International Students in Terms of KSB	205
CHAPTER SIX CONCLUSION.....	208
6.1 Introduction.....	208
6.2 Summary of the Thesis.....	208
6.3 Implications for Theory.....	211
6.4 Implications for Practice.....	216
6.5 Recommendations.....	220
6.6 Limitations.....	221
6.7 Conclusion.....	222

REFERENCES	225
APPENDICES.....	244
APPENDIX A: Questionnaire	244
APPENDIX B: Coding of the Constructs and Items	249
B1 Coding of (EHO, REP, SE, INTRUST)	249
B1 ‘continued’ coding of the constructs HUM, REL, and KSB.....	250
B2 First run for factor analysis	251
B2 ‘continued’ First run for factor analysis	252
APPENDIX C: Reliability for all the Constructs items	253
APPENDIX D: Interaction Effects of REL with Non-monetary Factors	257
APPENDIX E: Interaction of REL with Non-monetary Factors and Ethnicity	260
APPENDIX F: Interaction of REL with Non-monetary Factors and Gender.....	272

University of Malaya

LIST OF FIGURES

Figure	Title	Page
2.1	General Framework for Studying Knowledge Sharing	25
2.2	Individual Motivations, Social Capital, and Knowledge Contribution	26
2.3	Organisational Supports on Intention to Knowledge Sharing	28
2.4	Perceptions toward Knowledge Sharing Behaviour	29
2.5	Socio-technical Factors to Encourage Knowledge Sharing	30
2.6	EKR Usage by Knowledge Contributions	31
2.7	Attitudes about knowledge Sharing	32
2.8	Knowledge Sharing in Project Team in China	34
2.9	Employee Engagement and Manager Self-Efficacy	46
3.1	Research Framework	76
4.1	Respondent's Demographic Profile by Gender	109
4.2	Respondent's Demographic Profile by Age Group	110
4.3	Respondent's Demographic Profile by Country of Origin	111
4.4	Respondent's Demographic Profile by Ethnicity	112
4.5	Respondent's Demographic Profile by Religion	112
4.6	Respondent's Demographic Profile by Education Level	113
4.7	Skewness of the Regression Standardised Residual	130
4.8	Deviation of the P-P Plot of Regression Standardised Residual	130
4.9	Normal Distribution of the Regression Standardised Residual	132
4.10	Normal P-P Plot of Regression Standardised Residual	132

LIST OF TABLES

Table	Title	Page
2.1	Similarities and Differences in Definitions of KM	18
3.1	Broad Definition/Explanation of Positivist, Interpretive, Ontology, Epistemology, and Methodology	74
3.2	Summaries of Research Hypotheses	87
3.3	Knowledge Sharing Behaviour Scale Items	90
3.4	Enjoyment in Helping Others Scale Items	90
3.5	Reputation Scale Items	91
3.6	Self-Efficacy Scale Items	92
3.7	Interpersonal Trust Scale Items	93
3.8	Humility Scale Items	94
3.9	Religiosity Scale Items	95
3.10	Public Universities and Registered Postgraduate Students	97
3.11	Sample Design	100
3.12	The Parts, Constructs and Items of the Questionnaire	101
3.13	Pilot Survey Cronbach's Alpha	104
4.1	Gender vs. Ethnicity Crosstabulation	114
4.2	Gender vs. Religion Crosstabulation	114
4.3	Reliability Test on Constructs	116
4.4	Factors 1, 2, 3, 4, and 5 for REL, SE, INTRUST, REP, and EHO	119
4.4	'Continued' Factors 6, 7, 8 for SHUM, KSB, and GHUM	120
4.5	Summary of Reliability Test	121
4.6	Correlations	129
4.7	Casewise Diagnostics - Detecting the Outliers	131
4.8	Results of Multiple Regression - Moderator Effect of REL and Direct Predictors vs. KSB	135
4.9	Summary Result of the Interaction Effect of REL with Non-Monetary Factors vs. KSB	143

Table	Title	Page
4.10	Summary Result of the Interaction Effect of REL with Non-Monetary Factors and Malay Ethnic Group vs. KSB	150
4.11	Summary Result of the Interaction Effect of REL with Non-Monetary Factors and Chinese Ethnic Group vs. KSB	157
4.12	Summary Result of the Interaction Effect of REL with Non-Monetary Factors and the Indian Ethnic Group vs. KSB	163
4.13	Summary Result of the Interaction Effect of REL with Non-Monetary Factors and the Others Ethnic Group vs. KSB	170
4.14	Summary Result of the Interaction Effect of REL with Non-Monetary Factors and the Male Gender vs. KSB	178
4.15	Summary Result of the Interaction Effect of REL Levels with Non-Monetary Factors and the Female Gender vs. KSB	185
4.16	Independent Samples Test	187
4.17	Mean Difference between Groups	187
4.18	Summary Result of Testing Hypothesis 1	188
4.19	Summary Result of Testing Hypothesis 2	189
4.20	Summary Results of Testing Hypothesis 3	189
4.20	'Continued' Summary Results of Testing Hypothesis 3	190
4.21	Summary Results of Testing Hypothesis 4	191
4.22	Summary Result of Testing Hypothesis 5	191
5.1	Summary of the Questions, Purposes, Hypotheses, and the Findings	206
5.1	'Continued' Summary of the Questions, Purposes, Hypotheses, and the Findings	207

LIST OF ABBREVIATIONS

The abbreviations used in this study

Adj	Adjusted
G HUM	General Humility
EHO	Enjoyment of Helping Others
F	ANOVA F Test
HUM	Humility
INTRUST	Interpersonal Trust
KSB	Knowledge Sharing Behaviour
REL	Religiosity
REP	Reputation
S HUM	Scholar Humility
SE	Self-efficacy
SPSS	Statistical Package for Social Science
St	Standardised
VIF	Variance Inflation Factor
UM	University of Malaya
UPM	Putra University, Malaysia
UKM	National University of Malaysia
UTM	University Technology Malaysia
UITM	MARA University of Technology
UIAM	International Islamic University Malaysia
Cum Prob	Cumulative Probability
P-P Plot	Probability-Probability Plot

CHAPTER ONE

INTRODUCTION

The first chapter of this research will be an introductory section. To organise this chapter, this study has divided it into sections. The first section provides a background of the study. Section two shows the problem statement while the third section describes the purpose of the study. The research questions are then highlighted in the fourth section. In section five, the significance of the study will be discussed. The sixth section defines the terms used in the research. Then, there will be a brief discussion on methodology in section seven. The last section outlines the structure of the thesis.

1.1 Background

Knowledge has been recognised as an essential strategic source for organisations to sustain competitive advantage (Bock & Kim, 2002; Choi, Poon, & Davis, Schoorman, Mayer, & Tan, 2008; Lee, Kim, & Kim, 2006a; Lin & Lee, 2004; Liu, Raahemi, & Benyoucef, 2011; Narasimha, 2000; Osterloh & Frey, 2000; Teimouri, Emami, & Hamidipour, 2011; Wasko & Faraj 2005). However, knowledge is embedded within individuals who create, acquire, store, access and use knowledge when they are performing a particular task (Bock, Zmud, & Kim, 2005; Lin, Wu, & Lu, 2012). Knowledge has a dynamic dimension as it is created in a social interaction environment among individuals, as well as organisations (Borges, 2013). Knowledge also has a humanistic dimension as it connects human actions and activities (Nonaka, Toyama, & Konno, 2000). This importance of knowledge encourages managers to pay more attention to knowledge management in organisations (Choi et al., 2008). Moreover, various studies have proved that knowledge sharing is an essential influence on the achievement of knowledge management efforts (Bock et al., 2005; Lin & Lee, 2006b). In addition, Chennamaneni (2006) pointed out that knowledge sharing had become a fundamental key of knowledge management. Therefore, the interaction and social

relationship among employees play a vital role in enhancing knowledge sharing behaviour. Knowledge sharing has been defined as “*a social interaction culture, involving the exchange of employee knowledge, experiences, and skills through the whole department or organisation*” (Lin, 2007, p.315). When it is applied within the domain of the organisation’s routine work, it will become behaviour (Bock et al., 2005). Since knowledge sharing has become a focused area for many researchers, research need to have more understanding about its concept and definition, before going in depth to investigate the factors that influence the individuals within the organisation to share their knowledge.

Various variables have been proven in previous studies to motivate knowledge sharing behaviour such as individual, organisational and technological factors (Connelly & Kelloway, 2003; Lin, 2007; Vuori & Okkonen, 2012; Zamiri & Baqutayan, 2012). They argue that previous empirical studies in knowledge sharing were materialistic in nature, focusing on monetary compensation and rewards to encourage individuals to share their knowledge (Susanty & Wood, 2011). Instead, this study aims to determine the non-monetary variables that motivate individuals to share their knowledge.

1.2 Statement of the Problem

It has been realised that knowledge sharing is an essential activity that should take place among postgraduate students, an attribute that should not be taken for granted in universities. Despite the necessity of having to share knowledge effectively, few empirical studies highlighted on how non-monetary factors encourage postgraduate students to share their knowledge.

In the area of knowledge-based economy, knowledge is considered as one of the four pillars for production, together with land, labour and capital. Knowledge has been recognised as an important source in many organisations (Nahapiet and Ghoshal, 1998)

and performance can be improved by utilising relevant knowledge by individuals in the workplace (Sohail & Daud, 2009). In addition to this, many organisations consider knowledge as a main source for competitive advantage that facilitates and maintains sustainability and success for the long term (Wagner, 2003; Bock & Kim, 2002). However, knowledge resides in the minds of individuals who create and implement their knowledge while doing their work (Nonaka, Reinmoeller, & Senoo, 1998). This view implies that human beings are a critical source of knowledge. On a collective level, knowledge sharing could help individuals create and innovate new ideas and knowledge (Bartol & Srivastava, 2002). Therefore, some research started to investigate and identify the determinant factors that motivate individuals to share their knowledge. It is observed that research on the area of knowledge sharing behaviour based their assumptions on monetary rewards (salary increase, bonus, cash rewards, profit sharing, and so on) to promote the behaviour of knowledge sharing among individuals using different factors from different theories (Chang, 2011; Heydari, Armesh, Behjatie, & Manafi, 2011; Hung, Durcikova, Lai, & Lin, 2011; Lee, Lee, & Sanford, 2011; Yi, 2009; Zhang & Ng, 2013; Zhang, Pablos, & Zhou, 2013). Even though the prevailing assumption among considerable number of people is that monetary reward is the main motivator of individuals to do their work effectively, the findings of some research shows otherwise (Hung et al., 2011; Lee et al., 2011; Zhang, Pablos, & Zhou, 2013; Zhang & Ng, 2013). For instance, Bock and Kim (2002) reported that expected rewards were found to hinder knowledge sharing. In other words, knowledge sharing has been discouraged by expected rewards. The reason behind the negative impact of expected rewards was that it can succeed only for a temporary period of time (Bock & Kim, 2002; Hau, Kim, Lee, & Kim, 2013; Hung et al., 2011). And that once the rewards stop, people returned back to their previous behaviour. Therefore, monetary rewards might be a cause for knowledge sharing but not essential for changing one's behaviour (Bock &

Kim, 2002). Non-monetary factors support the principals of virtue theory as it positively influence social relationship (Kupfer, 2003). Furthermore, Crigger & Godfrey (2010) viewed virtue as a helpful instrument in enhancing relationship among individuals in different cultures and consequently, facilitates communication and sharing between among people. Moreover, the monetary perspective might cause a rupture in the relationship between recipients and non-recipients of the rewards, which create a negative competition among them (Kohn, 1993). The inappropriate evaluation of the rewards might lead to resentment from knowledgeable and expert people due to the feeling of unfair treatment (Koning, 1993). According to Kohn (1993), extrinsic rewards might be perceived as a punishment for those who are driven by passion and love for their work and may undermine the interest and the intrinsic motivation for optimal performance. Besides, the recipients of the monetary rewards may perceive it as a bribe to do their job. In addition, Kohn reported that when it comes to lasting change in behavior, monetary incentive was completely ineffective. He added that once the incentives stopped, individuals returned back to their old behaviour. He concluded that monetary incentives do not motivate the attitudes that build individual behaviour. It just changes what individuals do for a while. In contrast, Osterloh and Frey (2000) reported that non-monetary factors are considered as a stronger enabler of knowledge sharing compared to monetary factors. Non-monetary factors refer to the intrinsic incentives or personal traits that encourage an individual to engage in a social relationship to perform a specific task for their own sake.

Along this vein, Bock and Kim (2002) asserted that extrinsic rewards or monetary incentives are not the drivers of knowledge sharing behaviour, for they are not long-lasting and the emphasis should be directed to encourage the positive mood that is embedded in the social relationships that drive knowledge sharing behaviour. This trend opens the door to examine other intrinsic factors that motivate knowledge sharing

behaviour. Hence, this study adopted a humility construct from the virtue theory to be used as a non-monetary factor in determining knowledge sharing behaviour. On the other hand, past research also studied the influence of religiosity in different contexts such as shopping orientation behaviour (Mokhlis, 2006a; Essoo & Dibb, 2004), purchasing decision behaviour (Delener, 1994), ethical behaviour (Weaver & Agle, 2002), risk sexual behaviour ((Poulson, Eppler, Satterwhite, Wuensch, & Bass, 1998) and consumer behaviour (Sood & Nasu, 1995). Results from previous researches indicated that religiosity as a virtue was a significant determinant of ethical behaviour (Muhamad, Devi, & Mu'min, 2009), shopping orientation in consumer behaviour (Mokhlis, 2006a), and buying behaviour (Delener, 1990). From reviewing the literature in the area of knowledge sharing, religiosity behaviour seems to not have been explored yet. Therefore, this research will fill the gap in the literature by examining religiosity in the context of knowledge sharing behaviour. Consequently, this study is initiated and motivated by the fact that there has been little research if any up to the date the writing of this research exploring the effects of non-monetary factors, from a religiosity perspective, on knowledge sharing behaviour.

In spite of the broad acceptance of these factors in the literature review, there has been no empirical research which integrates non-monetary motivation factors with knowledge sharing behaviour, from the religiosity point of view, within the context of postgraduate students. Therefore, this research aims to fill this gap by examining the non-monetary motivation factors that enhance knowledge sharing behaviour among individuals within universities, from the religiosity perspective.

1.3 Purpose of the Study

Knowledge sharing has been widely used in developed countries as a pillar of knowledge management, but is still insufficiently explored in developing and

underdeveloped countries. Many managers have started to develop an effective channel to facilitate knowledge sharing by using electronic networks and databases, which are very important, but do not serve alone as a readymade tool for knowledge sharing as it lacks the human factor.

In the literature, various views are discussed on the factors that might influence knowledge sharing behaviour in different contexts. Therefore, the main purpose of this study is to achieve the following objectives:

1. To provide a better understanding of the different non-monetary motivating factors that encourages 'KSB' among postgraduate students within the public universities in Klang Valley, Malaysia.
2. To relate religiosity role as an influential factor on 'KSB'.
3. To evaluate how religiosity moderate the relationship between non-monetary factors and 'KSB'.
4. To assess the moderating effects of religiosity among different ethnic groups and different gender in the relationship between non-monetary factors and 'KSB'.
5. To identify the difference between Malaysians and International postgraduate students in terms of knowledge sharing.

Previous researches identified a number of motivational determinants from social science. For example, Lee, Cheung, Lim, and Sia (2006b) used psycho-social (personal interest and social context) components that influence customer knowledge sharing. Many authors studied the reward motivation factors (Bock & Kim, 2002; Lin, 2007). Others studied individual, organisational and technological factors (Lin, 2007; Wasko & Faraj, 2005). These studies will be the foundation for this research to investigate new factors that would influence the individual knowledge sharing

behaviour. Therefore, the current study proposes that humility can also be one of the determinants of knowledge sharing behaviour.

1.4 Research Questions

Referring to the problem statement section 1.2, this study will focus on the influence of the non-monetary factors on knowledge sharing behaviour. Mainly the study is going to examine the effects of the enjoyment in helping others, self efficacy, interpersonal trust and humility on knowledge sharing behaviour of postgraduate students, from a religiosity point of view. Consequently, in this study, the main research questions formulated from the problem statement to guide this investigation are:

1. What motivates postgraduate students in terms of non-monetary factors to share knowledge?
2. What role does religiosity play in the relationship between non-monetary factors and knowledge sharing behaviour?
3. How religiosity among ethnic groups moderates the relationship between non-monetary factors and knowledge sharing?
4. To what extent does religiosity among different gender groups moderate the relationship between non-monetary factors and knowledge sharing behaviour?
5. How does knowledge sharing behaviour differ between Malaysian and International students?

1.5 Significance of the Study

This study would contribute to the body of knowledge in the area of knowledge sharing behaviour and utilisation of the findings would facilitate universities administration to in terms of providing them with the significance of the non-monetary factors and religiosity when they setup their plans and strategies regarding knowledge sharing and help them to make the right decisions in encouraging their postgraduate

students to share their knowledge. Identifying the important factors that encourage individuals to share knowledge willingly without expecting an incentive reward is an attractive area to be explored by researchers too. In addition, exploring the non-monetary factors might provide a better understanding to administrators about the motivators that enhance knowledge sharing behaviour of students. Moreover, the detailed information about the non-monetary factors enables administrators to set their knowledge management strategies in their universities. Likewise, identifying the predictor of knowledge sharing behaviour would serve to enhance the competitive advantage of the universities, as well as, increase the students' knowledge and encourage innovation, which would eventually lead to an increase in the output of the universities. Furthermore, the study will provide a suitable model which can be used in other organisations and in other contexts. In addition, studying the intrinsic factors that influence knowledge sharing behaviour from the religiosity perspective will be most helpful in countries with different ethnic groups and religions.

1.6 Definition of Terms

The following definition is based on the variable that was used in the research framework and is derived from prior research and modified to be more appropriate for this research.

1.6.1 Knowledge Sharing Behaviour

Knowledge sharing behaviour refers to the degree to which an individual exchanges and shares knowledge and expertise with other colleagues within the university, and uses it to create new knowledge.

1.6.2 Non-Monetary Factors

Non-monetary factors refer to the intrinsic incentives or personal traits that encourage an individual to engage in a social relationship to perform a specific task for its own sake.

1.6.3 Enjoyment of Helping Others

The enjoyment of helping others, in this research, refers to the perception of pleasure obtained from helping others through sharing knowledge among colleagues in the university.

1.6.4 Reputation

The definition of reputation, was adapted from Hsu and Lin (2008), is “the degree to which a person believed that participation could enhance personal reputation through knowledge sharing” (p. 68).

1.6.5 Self-Efficacy

Self efficacy refers to an individual’s belief in his or her capability to perform a specific task.

1.6.6 Interpersonal Trust

Interpersonal trust is defined as individuals maintaining mutual faith and good intentions toward each other while sharing knowledge willingly among each other.

1.6.7 Humility

Humility is defined as a personal orientation found on a willingness to see the self accurately and a propensity to put oneself in perspective and involves neither self-abasement nor overly positive self-regard.

1.6.8 Religiosity

Religiosity is defined as the degree to which specific religious values, beliefs and ideas are held and practiced by an individual.

1.7 Research Methodology

A quantitative research approach was conducted to answer the research questions. This research chooses positivism as a philosophical approach and employs behavioural science as a paradigm. The hypotheses were proposed and formulated to be tested in order to answer the research questions. Furthermore, a questionnaire was prepared to collect data from postgraduate students and distributed through self-administrated survey. SPSS software package was used to analyse the data and test the hypotheses.

1.8 Thesis Organisation

It is useful to introduce a brief summary of the thesis chapterisation. The chapters were classified as follows:

Chapter One, Introduction: This chapter presents a background of the study and shows the major theme to be examined.

Chapter Two, Review of the Literature: This chapter provides an intensive review of the relevant literature on non-monetary factors, religiosity, and knowledge sharing behaviour, using three theories related to knowledge sharing behaviour and one theory related to religiosity. Based on the literature review and associated theories, the theoretical ground was built and the theoretical framework of this research was formulated.

Chapter Three, Research Methodology: In this chapter, the employed research method is described and the method section gives a clear and detailed picture of the research design.

Chapter Four, Analysis and Result: Here, the research focuses on analysis of data and empirical results, including the demographic analysis, the reliability of the measures and factor analysis result. After which, the multiple linear regression results are presented.

Chapter Five, Discussion of the Results: Chapter Five presents a discussion of the findings and shows the effect of non-monetary factors on knowledge sharing behaviour and the role of religiosity on the relationship between non-monetary factors and knowledge sharing behaviour.

Chapter Six, Conclusion: The conclusion chapter shows a summary of the earlier discussion and findings based on research questions. In addition, it highlights the significant implications of the study, followed by its limitations and recommendations for future research.

CHAPTER TWO

REVIEW OF THE LITERATURE

2.1 Introduction

This chapter reviews the relevant literature that explores the purposes of this research. This is to provide a better understanding of different non-monetary motivation factors that encourage knowledge sharing behaviour among postgraduate students within the universities, as well as, to relate the influence of those factors on knowledge sharing with religiosity. Lastly, to evaluate how religiosity moderate the relationship between non-monetary rewards and knowledge sharing behaviour. This chapter also defines knowledge; differentiates between knowledge and information; identifies classification of knowledge; defines knowledge management and its importance; and describes different non-monetary factors that influence knowledge sharing behaviour and its relation to religiosity.

2.2 Knowledge

Nonaka (1994) defines the concept of knowledge as “justified true beliefs” that point out the characteristic of knowledge as personal “beliefs” which are considered as the dynamic human process that focuses on the justification of personal beliefs.

According to Davenport and Prusak (1998a), knowledge is nothing but information with experience.

In this study knowledge refer to as the individual beliefs, thinking and experience that direct the person’s behaviour in doing his work and communicating with others.

Nonaka (1991) asserted that knowledge is a fundamental source for sustainable competitive advantage. Thus, to be successful, an organisation should continuously create new knowledge, distribute it all over the organisation and use it in an effective way. On the same line, Cheng, Ho, and Lau (2009) asserted that the economy was growing rapidly and required knowledge to be created, acquired, distributed and applied quickly.

Many organisations focus on knowledge and how to use it effectively to achieve objectives and grant benefits to the organisation (Davenport & Prusak, 1998a).

Nonaka (1994) noted that knowledge is a dynamic human process clarifying personal beliefs. In the same regard, Jain (2007) reported that knowledge is a human-based resource that can be gained by experience and observation. Thus, the human factor is essential for knowledge, as knowledge depends on their beliefs and values that are obtained from their extended experience.

Gupta, Iyer, and Aronson (2000) asserted that the concept of knowledge consists of tacit and explicit knowledge. This valuable knowledge is usually embedded in the people's minds (Skyrme & Amidon, 1997). The author affirms that the knowledge is instilled in the minds of the people.

McDermott (1999) noted that knowledge can be explained as a human activity that involves an expert who knows how to obtain, use and share knowledge, and is whatever retains in the person's mind through problem solving. Thus, knowledge is a human act that comes from experience which has been tested and made sense of.

2.3 Knowledge Vs Information

Jain (2007) observed that there was confusion between knowledge and information. For example, in library science, an information manager is referred to as the knowledge manager. The misunderstanding and interchangeable use arises from lack in distinction between the two concepts (Jain, 2007; Teimouri et al., 2011). According to Jain (2007), information is an organised interpreted data that has been transformed into facts in order to enhance decision making. He sees that information management refers to the management of an organisation's information resources to develop performance. Moreover, this development will be a strong ground for knowledge management as knowledge comes from information.

Wiig (1997) looked at information as an organised data that describes a particular situation, while knowledge as a "tool" set of truth and beliefs, perspectives and concepts, judgment and expectations, as well as methodologies. From the above discussion, a person can distinguish between information and knowledge. Information is collected organised data and the corner stone for knowledge, while knowledge itself is a human act that consists of experience, personal beliefs and values.

The difference between knowledge management and information management has been distinguished by (Bouthillier & Shearer, 2002). They argue that knowledge management is usually an emphasis on sharing of knowledge and usage of stored knowledge to achieve a set of objectives successfully, whereas information management occurs when the information is organised, kept and retrieved easily. It requires acquisition, storing, retrieving and distributing of information. On the other hand, knowledge management focuses on the act of people sharing their knowledge, using it successfully and storing it for future uses and needs, as well as, for innovation to enhance learning and organisation performance.

2.4 Tacit and Explicit Knowledge

Knowledge has been studied from several perspectives such as learning theory, strategic management, information and decision science (van Donk & Riezebos, 2005).

According to Nonaka (1991), knowledge can be divided into two types - tacit knowledge and explicit knowledge. Tacit knowledge is the knowledge or skill possessed by a person, which cannot be easily communicated to others, is difficult to formalise and to identify, because it includes intellectual matters such as beliefs, thinking and perspectives. Explicit knowledge is the knowledge that can be easily communicated, shared and translated to others for it is properly organised and can be used easily.

Nonaka (1991) described that an individual is the starting point of new knowledge, which consists of two different types - tacit knowledge and explicit knowledge. Moreover, Polanyi (as cited in (Nonaka, 1994) distinguished between the two types of knowledge with: "We know more than we can tell" in a sense that it is difficult to put tacit knowledge in terms of words. Tacit knowledge is possessed by an individual and is hard to be explained in words, and consists of mental models, beliefs and perspectives, that are difficult to be articulated and communicated (Nonaka, 1994).

Gupta et al. (2000) pointed out that intangible assets of the company that fall under the domain of personal, cognitive, and experiential learning were tacit knowledge and can add great value to day-to-day operations of the company. At the same time, tacit knowledge has two dimensions - technical and cognitive. Technical knowledge is the skills, experience and know-how gained by a person in a particular context (Gupta et al., 2000; Nonaka, 1991; Smith, 2001). In contrast, explicit knowledge is the second part of knowledge that is formal and organised in nature and can be easily communicated, shared among individuals in terms of product specifications, computer programs, database or scientific formulae (Nonaka, 1991).

Moreover, Smith (2001) mentioned that explicit knowledge is the knowledge which can be stored and transferred to knowledge workers without any adjustment. Hence, tacit knowledge is concerned with intangible assets while explicit knowledge deals with objective and technical knowledge (database, procedures, software, documents, etc.). Therefore, explicit knowledge can be codified, stored, transferred, used and reused by others (Gupta et al., 2000). Smith (2001) stated that explicit knowledge is the technical and academic data or information that is formal in nature, such as manual, books and reports. This allows knowledge to be easily used, communicated and shared by learning or training through structured and formal procedures. Once an explicit knowledge is codified, it can be used again in future as a source of knowledge to solve similar kinds of problems, or be shared and connect people with useful knowledge.

In other words, it could be stated that tacit knowledge is the mental motivation or inspirational knowledge, which needs to be put in reality, through the proper channels. On the other hand, explicit knowledge is a knowledge that finds its way to reality through golden rules.

2.5 Knowledge Management

Previously, knowledge management has become a subject of argument in business literature. It has been rapidly developed in several industries. Many authors and business people believed that knowledge was a way to gain competitive advantage, differentiate an organisation from rivals and to become a successful enterprise (Hwang, 2012; Bhatt, 2001).

Knowledge management has been defined in different ways. Until now, there is no specific or standard definition for knowledge management. The definition depends upon the context in which knowledge management is defined accordingly. Even though,

there are some similarities and common themes among the definitions, as well as a few differences. Comparisons were made based on the various definitions. Consequently, the differences and similarities are highlighted (Table 2.1).

As seen in Table 2.1, there are some common themes found among the definitions such as continuous processes, organising, distribution or sharing and benefits to individuals or the organisation. On the other hand, the definition from Liss (1999) that knowledge management will ensure availability and ease of use, distinguishes it from others. Whereas, the difference in definition given by (Gupta et al., 2000) was the capability of knowledge management to improve organisational performance through activities such as problem solving, dynamic learning, strategic planning and decision making. Quintas et al. (1997) added in his definition that knowledge management assists in using knowledge as a tool of innovation and creation of new ideas. While Bhatt (2001) appended to the definition that knowledge management helps in building the core competence of the organisation. Moreover, the differences in Jager's (1999) definition was that knowledge management makes the process of sharing implicit knowledge, such as experiences, and explicit knowledge as policies possible between individuals in organisations. The difference that distinguishes Skyrme and Amidon's (1997) definition was the potential of knowledge management in promoting the organisation's performance (Liss, 1999) which seems to be similar to merit. Finally, the features that differentiate Jain's (2007) definition from others was the consideration of knowledge management as an asset through which the organisation can achieve its objectives.

Table 2.1 Similarities and Differences in Definitions of KM

Author	Definition	Similarities	Differences
Liss (1999)	Refers to knowledge management as a formal, direction process of what information the company has and assures that information is distributed, shared and used by all the employees easily.	-Continuous process, -Organised - Distributing/sharing -Benefit	-Ease of use
Gupta et al., (2000)	Knowledge management is a process that locates, chooses, organises and distributes important information and utilises it within the organisation to support and improve performance through activities such as problem solving, dynamic learning, strategic planning and decision making.	-Continuous process - Organised - Distributing/sharing -Benefit	-Improving organisation's performance
Quintas, Lefere and Jones (1997)	Knowledge management is a continuous process of managing all kinds of knowledge to meet present and future needs, and use the collected knowledge to create new ideas which are considered tools for innovation.	-Continuous process -Organised -Availability -Benefit	-Tool of innovation -Creating ideas
Bhatt (2001)	Knowledge management is a process of knowledge creation, validation, presentation, distribution and application. Managing of these process activities will build the core competence of the organisation.	-Continuous process -Organised - Distributing -Benefit	-Core competence
Jager (1999)	Knowledge management is a systematic approach to classifying, managing and sharing the implicit and explicit knowledge such as experience, database, policies and procedures among the individuals within the organisation.	-Systematic process -Organised - Distribution/sharing	-Sharing implicit and explicit knowledge
Skyrme and Amidon (1997)	Knowledge management is a continuing exercise of creating, acquiring, capturing, sharing and using knowledge, to promote the organisation's performance to achieve its targets.	-Continuous process -Organised - Distribution/sharing -Benefit	-Promote organisation's performance
Jain (2007)	Knowledge management can be viewed as systematic activities that are put together in a certain place to enhance creating, sharing and using knowledge assets in order to achieve the organisation's objectives and to attain employee benefit, as well as the organisation's.	-Continuous process -Organised - Distribution/sharing -Benefit	-Knowledge assets -Achieve organisation's objectives
KM = knowledge sharing behaviour			

2.6 Knowledge Sharing Behaviour

Nowadays knowledge is becoming a major resource for organisations. It has become the main focus area for many researchers. As such, people need to have more understanding about the concept and its definition, as well as, investigate in-depth those factors that influence individuals within the organisation to share their knowledge.

2.6.1 Definitions of Knowledge Sharing Behaviour

The following part consists of definitions and providers of knowledge sharing behaviour and presents the similarities and major differences among them.

Knowledge sharing, in simple words, according to Hsu (2006) is “an employee behaviour which facilitates the dissemination or transfer of his/her knowledge to others” (p. 327). On the same context, Bartol and Srivastava (2002) defined knowledge sharing as “individuals sharing organisationally relevant information, ideas, suggestions, and expertise with one another” (p. 65). Similarly, van den Hooff and Ridder, (2004) refer to knowledge sharing as a process of mutual exchange of (implicit and explicit) knowledge among individuals to create new knowledge, which is essential to transfer individual knowledge to organisational knowledge. In the same way, according to Jain (2007) knowledge sharing is a long process of discovering and learning for individuals when colleagues come together and share their knowledge and generate new values. Thus, knowledge sharing focuses on the human factor in knowledge management. And whatever knowledge people have in their minds and share with others; becomes organisational knowledge.

While Davenport and Prusak (1998a), assuming that it is a new alteration in behaviour, report that making knowledge available in an organisation is not sufficient to transfer it and get its value. It must be absorbed and used in order to increase its value and make new changes in behaviour. Likewise, Ma, Qi, and Wang, (2008) contended

that knowledge sharing is to learn something from others, which needs reformulation. To share knowledge, you must have knowledge, then share it and use it with others, a communication which needs at least two persons – one who donates the knowledge and the other who collects it.

According to Hendriks (1999), knowledge sharing is the organisational innovation which enables the organisation to generate new ideas and initiate new opportunities or business and therefore, establish a competitive advantage. Another scholar, Milne (2007) explains that hoarding knowledge was an established practice in the past which was viewed as a competitive advantage. Now the challenge for managers is to create a culture where hoarding knowledge can be overcome, while sharing knowledge and learning become the standard for gaining competitive advantage.

Noor and Salim (2011) stated that knowledge is power in today's world, but the challenge is how to encourage people to share their knowledge. They added that to achieve it would involve many factors such as individual, organisational, and technical factors.

In terms of definitions, most of the authors mentioned above agreed that knowledge sharing behaviour is a mutual exchange of knowledge, which tackles the similarities of the key definition of knowledge sharing behaviour. However, the differences found in the previously mentioned definitions of knowledge sharing behaviour are indication that there is no common definition of knowledge sharing behaviour. For example, knowledge sharing behaviour was defined as a mutual exchange of knowledge (e.g. Bartol & Srivastava, 2002; Hsu, 2006; Jain, 2007; Ma et al., 2008; Ryu, Ho, & Han, 2003; van den Hooff & Ridder, 2004). Jain (2007) described knowledge sharing behaviour as transferring individual knowledge to organisational knowledge, whereby the meaning of knowledge sharing behaviour is described as an

increase in value of knowledge and the creation of a new change in behaviour. Authors like Hendriks (1999) mentioned that knowledge sharing behaviour established competitive advantages in the organisation.

From the above definitions, this study formulated a definition of knowledge sharing behaviour for this study. Knowledge sharing behaviour refers to *the degree to which individuals exchange and share knowledge, expertise, and skills with other colleagues in the organisation and uses it in order to create new knowledge.*

2.6.2 Models of Knowledge Sharing Behaviour

Different authors use different theories to examine knowledge sharing behaviour. For instance, Wasko and Faraj (2005) applied collective action theory to investigate how an individual's motivation and social capital affect knowledge contribution in the domain of electronic network. Collective action theory refers to mutual interests of individuals tend to contribute their efforts, knowledge, and time voluntary to the collective benefit (Agarwal, Lim, & Wigand, 2011). Bock et al. (2005) employed the theory of reasoned action of Ajzen and Fishbein (1980) and expanded it with extrinsic motivation, social psychological factors and organisation climate factors that might influence knowledge sharing intention. Reasoned action theory refers to as an individual's decision to engage in a specified behavior is determined by their intention to perform the behavior, which in turn is determined jointly by their attitude and the subjective norm toward the behaviour (Bock et al., 2005). Hsu, Ju, Yen, & Chang (2007) utilised the social cognitive theory combined with other factors such as personal influence, dimensional trust for environmental influence, self-efficacy and knowledge sharing influences to predict knowledge sharing behaviour. Other studies conducted by Kankanhalli, Tan, and Wei (2005) formed a framework using the social exchange theory to find out the factors affecting electronic knowledge repository usage. Another

study by Bock and Kim (2002) was based on the social exchange theory, theory of reasoned action and self-efficacy to develop an understanding of the constructs that influence knowledge sharing behaviour in the context of an organisation.

This study uses various factors adopted from the social exchange theory, cognitive theory, social capital theory, as well as the virtue theory. Social exchange theory refers to an individual's exchange their knowledge to others in order to get benefit in return for what they contribute (Lee et al., 2006b). Social cognitive theory refers to an internal capability of an individual and his own self-evaluation that encourage him to accomplish a particular job (Bandura, 1982). Social capital theory defined as "resources embedded in a social structure that are accessed and/or mobilised in positive action" (Wasko & Faraj, 2005, p. 38). The theory of virtue refers to a good character of a person and his traits that influenced his attitudes and beliefs; this in return affected his act and behaviour (Ostwald, 1962a).

Those factors were intrinsically motivating individuals to share knowledge with others without monetary incentives in return. These incentive factors that motivate individuals to exchange knowledge sharing among colleagues are called non-monetary factors. The research framework is formulated to explain the influences of non-monetary rewards on knowledge sharing. This study expects that non-monetary factors will predict individual knowledge sharing behaviour.

Hsu (2006) conducted a study to investigate the influence of organisation practices (continuous wide learning individuals, performance management system and information disclosure) that encourage the employees and motivate them to share knowledge by using social cognitive theory. The study covered nine Taiwanese companies from the industry sector. As the author mentioned, Taiwan has multinational cultural values brought from many western countries, which reflect the employee's

behaviour, thinking and attitude. These various differences among Taiwanese employees become an issue for Taiwanese companies who would like to promote knowledge sharing. Using a multi-case study approach, interviews were held with CEOs, managers and company members. In addition, secondary data were collected from the companies' documents and reports. The findings of the study reveal that the three organisational practices (continuous wide learning individuals, performance management system and information disclosure) were strongly supported by the CEO's determination to motivate the employees to share knowledge. The study investigated the factors that motivated employees to share their knowledge from an organisational practice point of view and neglected the intrinsic personal factors, which reflected the real interest of the employees to share their knowledge willingly.

Another study was conducted by Parirokh, Daneshgar and Fattahi (2008) to evaluate the knowledge sharing in university libraries. The target population of the study was reference librarians who are members in The American Library Association, and who provide services to customers. The data was collected by distributing a questionnaire and the respondents were only 30 academic librarians from various universities in America. The result revealed that participants get their knowledge by means of community expertise, web logs and professional discussion groups. The result also revealed that the librarians prefer to acquire their knowledge from colleagues rather than from academicians. As the author mentioned, there are two elements that must be present in the organisation to encourage knowledge sharing. The first element is the organisational support which includes policies and procedures that facilitate knowledge sharing while the second element is personal interest among librarians. From the results, there was a lack of both elements in the research. Finally, there is no institutionalisation of knowledge management and knowledge sharing in most of these libraries. The sample size of the respondents of the study was too little and must expand

its range of participants in order to have a deep knowledge related to knowledge sharing. Similar to the study of Hsu (2006) both authors emphasised on the intrinsic factors that encourage knowledge sharing, the personal interest and the willingness of a person.

Lin (2007) carried out a study to examine the influence of individual, organisational and technological factors on the knowledge sharing process and whether innovation capability will emerge from this relationship (Figure 2.1). The individual factors include the enjoyment in helping others and self-efficacy; and the organisational factors consist of top management support and organisational rewards; while the technological factor comprises information and communication technology. The author used a questionnaire to collect his data. The questionnaire was distributed to 500 big Taiwanese Firms. 172 questionnaires were returned which showed a 34.4% respondent rate. To analyse the data, a structure equation modelling was used to validate the research model. The results of the study showed that there was a positive relationship between individual factors (enjoyment of helping others and self-efficacy) and knowledge sharing (collecting and donating).

Top management support factor was also strongly associated with knowledge sharing, whereas organisational rewards and information communication technology were not supported. Similarly, the empirical finding of Bock and Kim (2002) indicated that expected rewards do not have significant influence on attitudes toward knowledge sharing, contrary to the economic exchange theory.

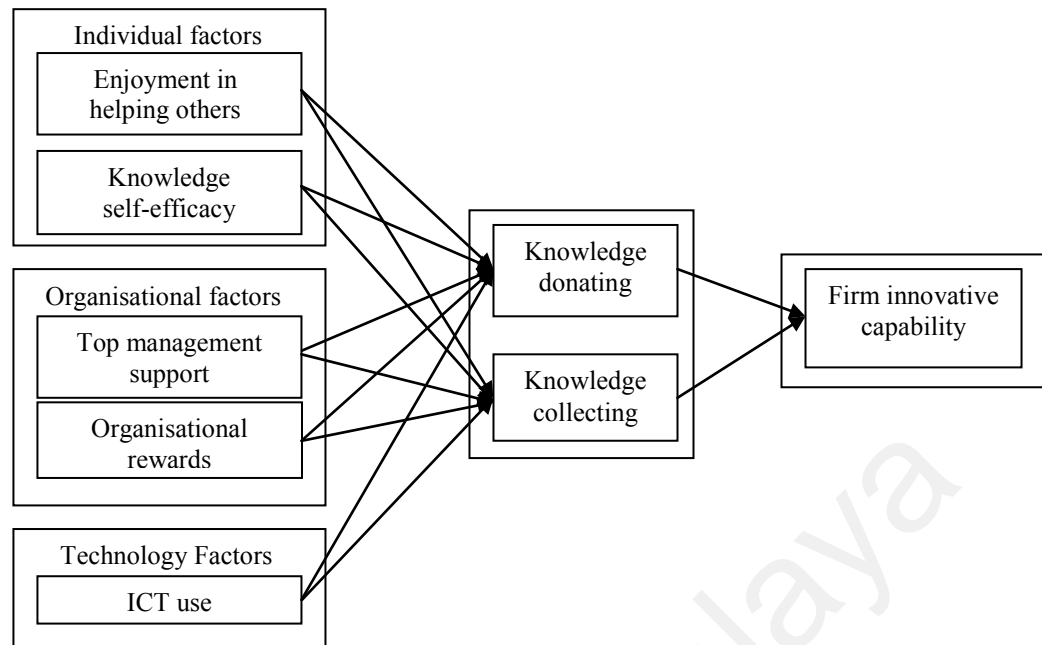


Figure 2.1 General Framework for Studying Knowledge Sharing

Source: Lin (2007)

Suhaimee, Abu Bakar, Alias and Alinda (2006) conducted a study among a community of practice in the Malaysian Public Institution of Higher Education (PIHE). The main purpose of the study was to investigate the knowledge sharing culture among this community. To collect data for the research, the authors distributed a questionnaire to 17 managers of information technology in the PIHE to get a clear vision about the existing situation of the knowledge sharing culture. The result showed that the knowledge sharing culture was still new in the PIHE and had a lower progress in these institutions. The author suggested that the Ministry of Education should have its policies to promote a knowledge sharing culture among its employees. The sample size of the study was very small and focused only on the IT managers, and did not address the vast majority who consisted of the population of the PIHE such as the lecturers, students and librarians. Therefore, the result of the knowledge sharing culture could not be generalised to the PIHE as a whole.

In another study, Wasko and Faraj (2005) examined why individuals help and exchange ideas with others in the electronic network of practice (Figure 2.2). The data was collected from the members of the national legal association in the United States. They argued that individuals may contribute knowledge because they perceive that helping others in solving problems is enjoyable and feels good. Therefore, the authors' assumption was that individuals who enjoy helping others will contribute more helpful responses to electronic networks of practice. But their results did not provide strong evidence to their argument that enjoyment of helping others influenced the knowledge sharing behaviour of the members in the network.

The study provided weak support that those who enjoy helping others gave more helpful advices as suggested by previous studies in the domain of electronic network. An explanation of this weakness might be justified by the unknown nature of the network and the lack of professionalism in participation of the network. In contrast, Hsu and Lin (2008) and Lin (2007) found that the enjoyment of helping others as an individual intrinsic motivation supported the encouragement of sharing knowledge.

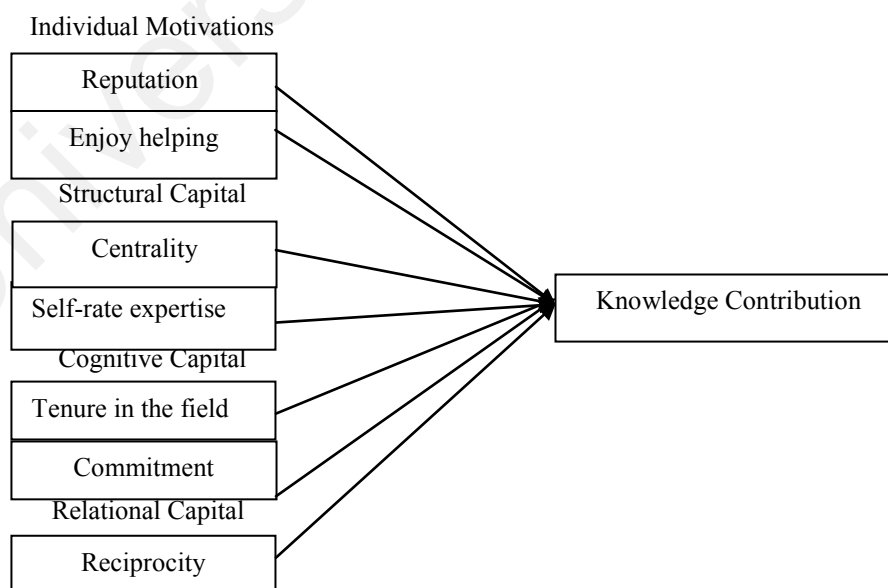


Figure 2.2 Individual Motivations, Social Capital and Knowledge Contribution

Source: Wasko and Faraj (2005)

Lin (2006a) conducted a study to examine the influence of organisational support on the organisation's intention to facilitate knowledge sharing through the organisational perception of innovation characteristics, which consist of two factors - perceived relative advantage and compatibility, and interpersonal trust (Figure 2.3). To conduct this study, the author applied the innovation diffusion theory. Innovation diffusion theory refers to "adoption of new technology and distributed widely to be employed and used" (Sahin, 2005). The questionnaires were distributed to senior executives in large Taiwanese organisations. 720 questionnaires were distributed randomly. Only 153 questionnaires were returned with 21.4% response rate. The author used structural equation modelling to analyse the data. The results of the study indicated that management support was positively related to the organisational perception of innovative characteristics (perceived relative advantage and compatibility of knowledge sharing) and also showed a positive relationship to interpersonal trust. Both variables (organisational perception of innovative characteristics and interpersonal trust) were positively related to the organisation in facilitating knowledge sharing. In contrast, Lin (2007) used individual, organisational and technological factors together to facilitate knowledge sharing and innovation capability, a study which he based innovation diffusion theory. The similarity in these two studies is the result of the organisation factor. Both studies show that organisational factors were positively related to knowledge sharing.

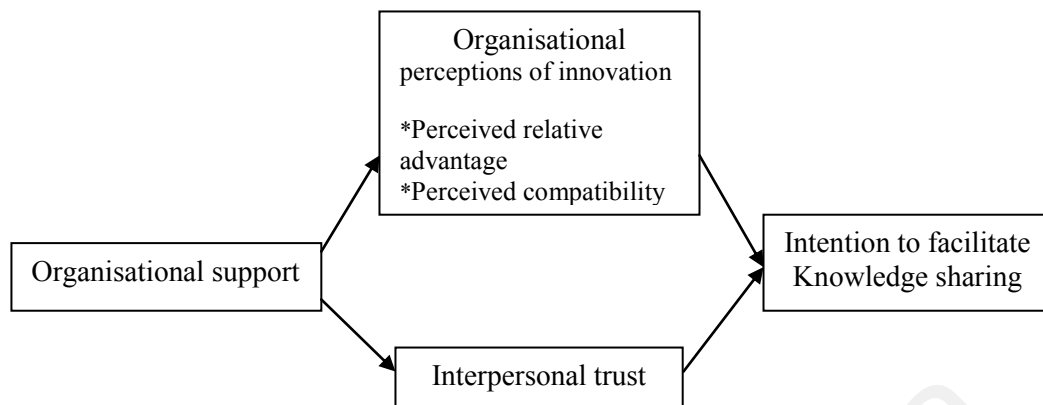


Figure 2.3 Organisational Supports on Intention to Knowledge Sharing

Source: Lin (2006a)

Lin and Lee (2004) carried out a study on the perception of senior managers towards knowledge sharing behaviour by using the Ajzen theory of planned behaviour (TPB) to formulate a framework, in order to evaluate the factors that influence knowledge sharing behaviour (Figure 2.4). The data was collected from senior managers of the largest Taiwanese organisations. Questionnaires were distributed to 720 senior managers randomly and 153 were returned with 21.4% response rate. To analyse the data, the structural equation modelling was used.

The results found that there was a positive relationship between the senior manager's intention to encourage knowledge sharing behaviour and knowledge sharing behaviour. There was also a positive relationship between the senior manager's attitude, subjective norm about knowledge sharing and perceived behavioural control to knowledge sharing and intention to encourage sharing behaviour. Finally, the study found that in order to build a knowledge sharing culture in the organisation, senior managers should encourage knowledge sharing behaviour.

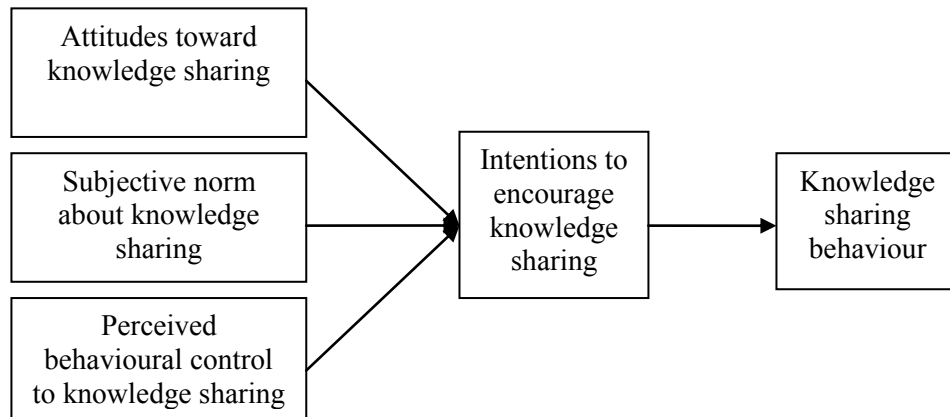


Figure 2.4 Perceptions toward Knowledge Sharing Behaviour

Source: Lin and Lee (2004)

On the contrary, Bock and Kim (2002) applied the Fishbein and Ajzen model to investigate attitudes about knowledge sharing behaviour. The similarity in both studies was the positive results of the attitude towards knowledge sharing and the significant relationship between the intention to share knowledge and knowledge sharing behaviour.

Lin and Lee (2006b) conducted a study to examine the influence of socio-technical factors (organisational climate as a social factor and information technology support as a technical factor) on the behavioural intention to encourage knowledge sharing through innovative characteristics (perceived relative advantage, perceived compatibility and perceived complexity) (Figure 2.5). The data of the study was collected from senior executives in Taiwanese organisations. The questionnaires were distributed to 720 senior executives of big enterprises in Taiwan. In their study, knowledge sharing referred to the willingness of the employees to donate and collect knowledge, experience, and skills with colleagues. The actual usable questionnaires were 154 with response rate of 21.4 percent. The results revealed that perceived

advantage, compatibility, was significantly related to intention to encourage knowledge sharing.

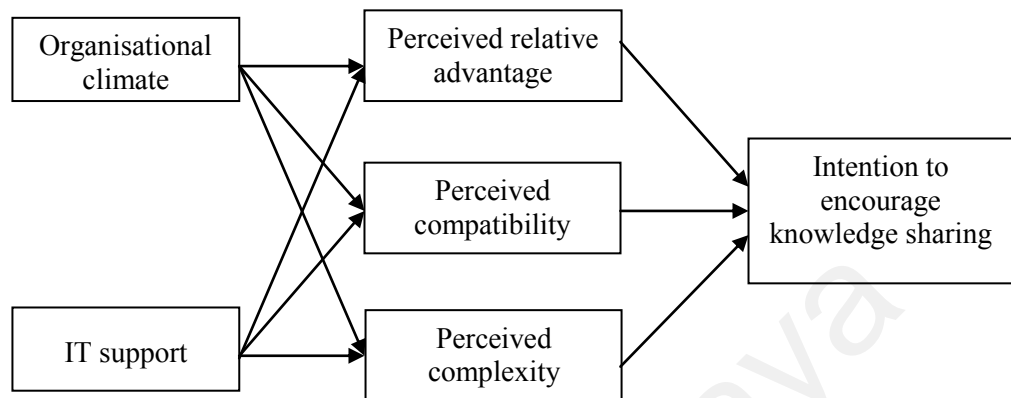


Figure 2.5 Socio-technical Factors to Encourage Knowledge Sharing

Source: Lin and Lee (2006b)

The results showed that complexity was negatively related to the intention to encourage knowledge sharing. In addition, organisation climate was positively related to perceive related advantage and perceived compatibility, but was negatively related to perceived complexity. The interesting find was that IT support did not significantly relate to innovative characteristics. The author justified that IT only may not be sufficient to enhance knowledge sharing and is only a tool to access knowledge and not necessarily to apply knowledge. Similarly, in the findings of Lin (2007), the technical factor was found to be not significantly related to knowledge donation. In addition, both studies conducted in Taiwan indicated that Taiwanese employees might have the culture of not using IT for knowledge sharing.

Kankanhalli et al. (2005) examined the cost factors, extrinsic benefit factors and intrinsic benefit factors that are influencing electronic knowledge contribution using the social exchange theory and social capital theory (Figure 2.6). They proposed that cost factors (i.e. loss of knowledge power and codification efforts) with benefit factors (i.e.

organisational rewards, image, reciprocity, knowledge self-efficacy and enjoyment in helping others) have an influence on electronic knowledge repositories. The data was collected from knowledge management practitioners in Singapore. 400 questionnaires were distributed and 151 were returned with 37.5% response rate. The data was analysed by using the multiple regression analysis method. The findings showed that self-efficacy and enjoyment in helping others had a significant influence on electronic knowledge repositories usage by knowledge contributors. From a theoretical point of view, this study emphasised on reward as an essential factor in motivation knowledge sharing. The findings showed that organisational rewards such as salary and promotion incentives were effective to enhance knowledge contribution under one condition - the strong identification by publicising the reward first. In contrast, the empirical study of Bock and Kim (2002) found that expected rewards related negatively to knowledge sharing. Moreover, Lin (2007) found in his study that organisational rewards had insignificant effects on knowledge sharing. In addition, the findings of Bock et al. (2005) indicated that extrinsic rewards related negatively to attitudes toward knowledge sharing.

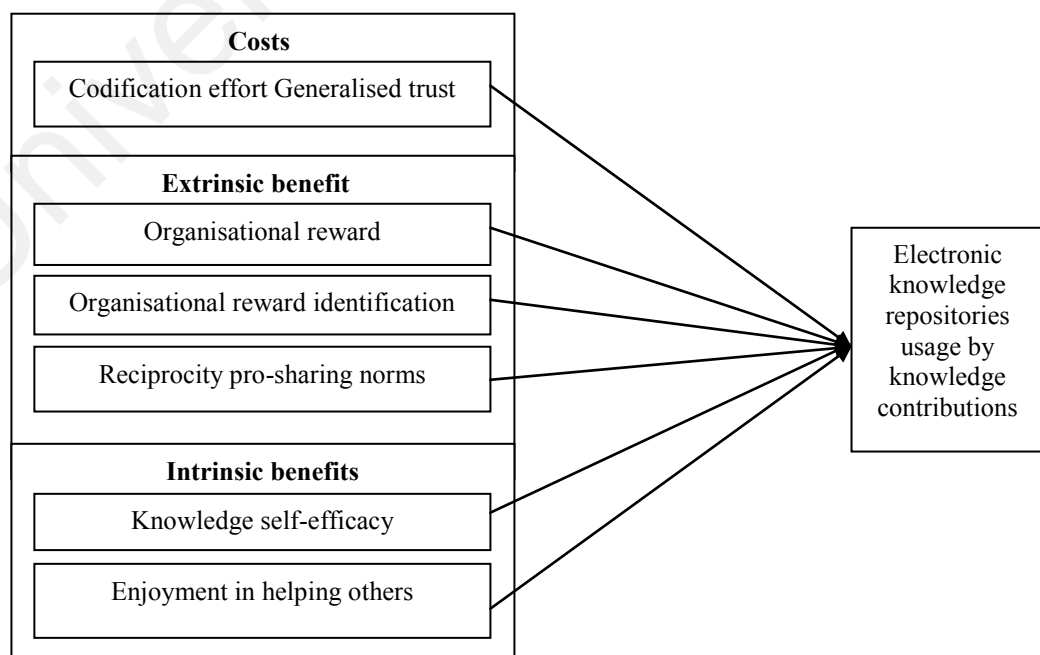


Figure 2.6 EKR Usage by Knowledge Contributions

Source: Kankanhalli et al. (2005)

According to Bock and Kim (2002), the framework shown in (Figure 2.7) indicates the proposed relationship. The sample of the study was taken from 75 departments of four large public organisations in Korea. The questionnaires were distributed to the employees in these organisations that were the unit of analysis in the study. Only 467 out of 900 were used, and regression analysis was used to test the hypotheses. The results of the study showed that expected rewards were negatively related to the attitude of knowledge sharing. The authors explained the negative relationship as such: the experienced workers believed that they should share knowledge that was acquired from their work and training and looked at it as a normal business activity. Therefore, employees may have a negative perception toward receiving extrinsic motivations or benefits in return for their knowledge sharing behaviour. These results show that rewards are not the primary power for influencing the individual's attitude as once the extrinsic benefit is exhausted; individuals go back to their old behaviour. Thus, eventually extrinsic motivations do not affect the attitude of knowledge sharing behaviour. They do not create a commitment to any action and their influence seems to be temporary compliance.

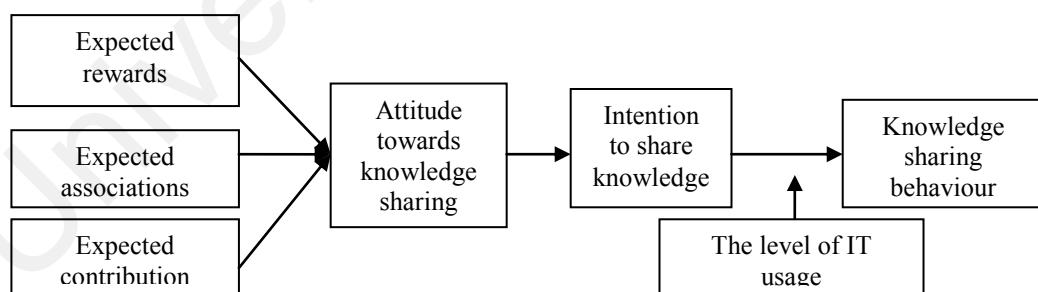


Figure 2.7 Attitudes about Knowledge Sharing

Source: Bock and Kim (2002)

Similarly, Lin (2007) empirically studied the relationship between organisational rewards on knowledge sharing (donating and collecting). He argued that if employees believe they will receive organisational rewards by contributing their knowledge, they

will enhance and promote positive willingness to collect and donate knowledge. Accordingly, he proposed that organisational rewards positively influence employee willingness to both donate and collect knowledge. The results showed that organisational rewards had no significant relationship with employee sharing knowledge (collecting and donating) which is consistent with the results of Bock & Kim (2002) that extrinsic motivators do not support knowledge sharing behaviour. Contrary to commonly accepted tradition linked to knowledge management plans, the need for extrinsic rewards may hinder rather than promote attitudes toward knowledge sharing (Bock et al., 2005).

Ma et al. (2008) examined the influence of explicit and tacit knowledge, justice, trust, leadership style and empowerment on knowledge sharing (figure 2.8). Questionnaires were used to collect the data from 222 managerial employees and project technicians who constituted the project team in the research. All participants were working in large construction companies in north China in the province of Liaoning. Only eight companies were selected for the study. 188 questionnaires returned and the respondent rate was 84.7%. Regression analyses were used to examine the predictive factors that predict knowledge sharing. The results of the study showed that explicit knowledge was related significantly to knowledge sharing. On the other hand, tacit knowledge negatively related to knowledge sharing, as proposed. Trust was significantly related to knowledge sharing in the context of construction companies, whereas justice, leadership style and empowerment were not supported. Moreover, the study showed that there was a partial validation of the western theories of knowledge management, even in China where the culture is different. The model of the study was very simple and examined direct relations between independent and dependent variable. In contrast, Hsu and Lin (2008) established a model with a mediating variable, which is the attitude to share knowledge, in order to predict intention to share knowledge.

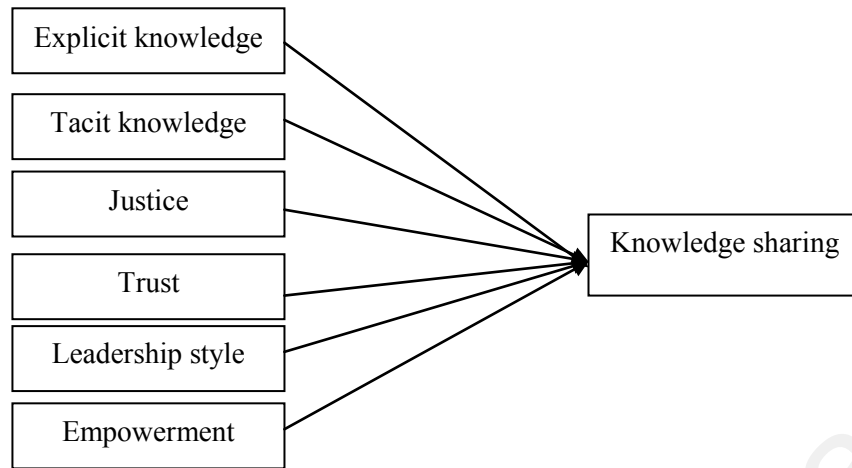


Figure 2.8 Knowledge Sharing in Project Team in China

Source: Ma et al. (2008)

The study of Chennamaneni (2006) proposed that organisational incentives were associated with the attitudes toward knowledge sharing, among knowledge workers. The findings showed that perceived organisational incentives positively affected their attitude towards knowledge sharing. Compared with the study of Bock and Kim (2002), findings showed that there were no significant association between reward incentives and their attitude towards knowledge sharing. The different results might be due to the application of different theories in examining knowledge sharing. Chennamaneni (2006) used the Theory of Planned Behaviour, while Bock and Kim (2002) used the Theory of Reasoned Action.

Alam, Abdullah, Ishak and Zain (2009) carried out an empirical study to examine the crucial factors that predict knowledge sharing behaviour among employees in small and medium enterprises, particularly in the Melaka and Johor states in Malaysia. The findings of the study revealed that there was significant relation between the reward system and knowledge sharing behaviour. He added that this means the higher the reward system, the higher the knowledge sharing activity. The results of the study might not be generalised, for the reason that it only examines two Malaysian

states. In addition, a better study would examine knowledge sharing among Malaysian ethnicity in small and medium enterprises.

The findings of Zawawi et al. (2011) showed that knowledge sharing activities among employees of public universities in Malaysia was motivated by organisational rewards. In addition, he explained that the reluctance to give rewards to employees will result in less knowledge sharing. The finding of Zawawi et al. (2011) was consistent with the findings of Cheng, Ho and Lau (2009) where the monetary incentive system was significantly associated to knowledge sharing.

Kim and Ju (2008) conducted an empirical study to examine the major factors that influence knowledge sharing among lecturers in a higher educational institution (private research university in Seoul, South Korea). The findings of the study showed that a reward system was significantly related to knowledge sharing, which was similar to the findings of Cheng et al. (2009), where an incentive system factor was positively related to knowledge sharing and promote the activity among the academics. What draws the attention here is, while knowledge sharing activity was supposed to be the fundamental work of academic staff and ingrained in academic institutions, findings revealed that they were money oriented instead of knowledge oriented (Cheng et al., 2009).

2.7 Motivation of Knowledge Sharing Behaviour

From the reviewed literature and their research models, it seems that they used various constructs from a variety of theories investigating the knowledge sharing. Obviously, no study had examined the impact of non-monetary rewards in predicting knowledge sharing behaviour in the presence of religiosity. To fill this gap, this study combined various non-monetary rewards variables together as intrinsic motivation factors to encourage knowledge sharing behaviour among postgraduate students. The

conceptual framework of this study was built up using established non-monetary variables in different prior empirical studies for better understanding of the influence of these constructs on knowledge sharing. In addition, this study used religiosity as a moderating variable to find out its role on the relationship between non-monetary rewards (or intrinsic motivation variables) and knowledge sharing behaviour.

The prior studies revealed that knowledge sharing can be motivated by various factors. For example, individual factors studied by (Lin, 2007; Wasko & Faraj, 2005), organisational rewards investigated by (Bartol & Srivastava, 2002; Bock & Kim, 2002), technological factors examined by Lin, (2007) and so forth. In the present study, the research is focused on the non-monetary rewards that encourage knowledge sharing behaviour among colleagues within the students in public universities in Malaysia.

2.8 Non-Monetary Factors Influence Knowledge Sharing Behaviour

From the social exchange theory of Blau (1964) and the explanation on non-monetary rewards (Bartol & Srivastava, 2002), as well as the definition of intrinsic motivation by Ryan and Deci (2000) this study derived the definition of the concept of non-monetary rewards as *the intrinsic and intangible incentives that encourage an individual to engage in a social relationship to perform a specific task for its own sake*.

Knowledge sharing is critical to the success of knowledge management in organisations. This situation drives us to seek out a better understanding about motivators that enhance knowledge sharing behaviour among employees within an organisation. The literature recognises that various factors are influencing employees' knowledge sharing behaviour such as individual, organisational, and technological factors (Connelly & Kelloway, 2003; Lee & Choi, 2003a). Many researchers agree that individual characteristics which consist of individual experience, values, motivations,

needs, and beliefs, play a vital role in influencing knowledge sharing behaviour among employees (Lin, 2007; Wasko & Faraj, 2005; Zhang, Pablos, & Zhou, 2013).

According to Blau (1964), the social exchange theory established the notion that people exchange and share their services to gain something in return. Intangible or intrinsic rewards such as praise, courtesy, entertainment or the enjoyment of helping others are also considered as benefits that individuals gain when they interact with each other. This perception indicates that even a social relationship can be rewarding. Ryan and Deci (2000) stated that to be motivated means to be encouraged and activated to do something. They defined intrinsic motivation as “the doing of an activity for its inherent satisfaction”. Kalman (as cited in Bock et al., 2005) stated that extrinsic rewards or tangible motivations such as cash awards, increase in salary, profit sharing, and bonus will achieve its goal in encouraging individuals to share knowledge, but only for a temporary period. Similarly, Bock and Kim (2002) found that extrinsic rewards were a hindrance in encouraging knowledge sharing and did not create a permanent commitment to any action. From this platform and in the line with Bartol and Srivastava (2002), they asserted that non-monetary rewards and intrinsic motivation factors are primary and important in enhancing the motivation of individuals to share knowledge. In the present research, this study will mainly focus on non-monetary motivation factors that encourage knowledge sharing behaviour of individuals. Moreover, the following section reveals the literature that is related to the factors that have been proved as motivators to the behaviour of employees on sharing knowledge with colleagues in the organisation.

2.8.1 Enjoyment of Helping Others

The enjoyment of helping others is based on the altruism concept which refers to helping others willingly without expecting something in return. According to the social

exchange theory, Blau (1964) suggested that intrinsic rewards do not need an accurate price in return. The returns will be intangible such as feeling of joy while helping others (Davenport & Prusak (1998a). The enjoyment of helping others in this research refers to *'the perception of pleasure obtained from helping others through sharing knowledge among colleagues in the university'*. This construct has been used by Kankanhalli et al. (2005), Lin, (2007), Wasko and Faraj, (2005). Prior research showed that individuals, who were intrinsically motivated to share knowledge, for example engaging in solving problems, gave them a feeling of challenge and pleasure, and eventually the enjoyment of helping others (Rahab, Sulistyandari, & Sudjono, 2011; Wasko & Faraj, 2000). Individuals who derive enjoyment in helping others may be more positively oriented toward sharing knowledge with colleagues. The enjoyment of helping others has been found significant in predicting an individual's knowledge sharing behaviour (Fang & Chiu, 2010; Lin, 2007; Yu, Lu, & Liu, 2010).

Ardichvili, Page, and Wentling (2003) conducted a study to determine the factors that lead to success in virtual knowledge sharing communities of practice at Caterpillar Multinational Corporation. The study looked at the motivators that influenced the members of the intranet community to share knowledge through the network. The study was based on a qualitative case study and the participants were 30 managers, experts and community members. The data was collected through semi-structured interviews and various documentations of the company. The findings of the study showed that knowledge sharing in intranet communities was motivated by the moral obligation of the members and their community interest. Some of the participants indicated that they share knowledge because it is their nature. In addition, one more case showed that organisation culture also motivated the mutual relationship among members. Moreover, the study found that to enhance knowledge sharing among members, they must be trusted not to misuse the knowledge they share. According to

the findings of the study, the authors mentioned that the requirements for the success of knowledge sharing in the community of practice were first, the activeness of the members and their willingness to participate in sharing knowledge with other members. Second, the intrinsic motivation (trust) which emerges from social interaction was considered as a powerful enabler that encouraged individuals to share knowledge more than extrinsic motivators (e.g. monetary motivation). Among them, social relationships and organisation culture and environment were the biggest factors that influenced knowledge sharing in the virtual community of practice. The third requirement was a comfortable internet system to enable the members to participate in the community of practice and to share knowledge without face-to-face communication. The study enhanced the debate that non-monetary factors such as willingness to participate and share knowledge with other members and trust, were stronger than extrinsic factors in motivating knowledge sharing behaviour.

In a study by Kankanhalli et al. (2005), the findings showed that enjoyment in helping others was significantly associated with contributing knowledge to electronic knowledge repositories. As proposed, people tended to contribute more knowledge if they felt good about their contribution in helping others. The findings also strengthened the notion of intrinsic motivation in affecting the behaviour of knowledge sharing. Moreover, Davenport and Prusak (1998a) pointed out that altruism is a strong motivator for knowledge sharing. Similarly, the findings showed that people were engaged in helping others in the electronic community of practice, because they felt fun and enjoyment, which brought self-satisfaction and motivated knowledge sharing behaviour.

2.8.2 Reputation

Reputation comes from the theory of social exchange of Blau (as cited in Wasko & Faraj, 2005). According to the theory, individuals participate in social interaction due

to the expectation that ends with social rewards such as status, respect and reputation (Chou, 2010; Emelo, 2012; Wasko & Faraj, 2005). This understanding shows that a person can benefit from sharing his knowledge with others. This perception of sharing would enhance his or her reputation among peers in the network. Brown and Dacin (1997) defined reputation as “a set of mental association possessed by an individual outside the company”. Wasko and Faraj (2005) explained that maintaining a status or reputation can be achieved through sharing knowledge and by participation through social interaction. This explanation revealed that reputation was considered as one of the non-monetary factors that increase knowledge sharing among individuals.

Kankanhalli et al. (2005) argued that reputation becomes an important element to the employees who work for a long time in an organisation. In such working situations, those employees can benefit from showing their experience and knowledge they have to other colleagues. At the end, this behaviour of contributing knowledge, in return, will give them respect and a good image. Therefore, individuals who share their knowledge can improve self-esteem among peers. Individuals with the behaviour of sharing knowledge and practices will be recognised by others as experts and as a result, they will get a more prestigious reputation and image in their work place.

The term ‘reputation’ is popular on a corporate level, as well as, a personal level. Chun (2005) reported that within the corporate perspective, reputation is an intangible valuable asset of a company in the eyes of the shareholders, which encourage investors to invest in it. Chun (2005) asserted that there has been emphasis in the reputation literature that employees prefer to work and stay as long as they can with a good, reputable company.

Chun (2005) argued that the concept of reputation and image in marketing literature has been used interchangeably. He added that the recent common definition of

reputation and image is “a summary of the impression or perceptions held by external shareholders”. Chun (2005) distinguished between image and reputation. The later term is particularly used to indicate the accumulation of historical meaning over time. For example, an individual’s reputation implies long years of experience built up in a particular area and the possession of a high quality of skills. Meanwhile, image is defined as the feeling and perception of others from their experience and observation.

Image is also defined and described as reputation. For instance, Kankanhalli et al. (2005) defined image as “the perception of increase in reputation due to contributing knowledge to electronic knowledge reposition”.

In this research, the emphasis will be concentrated on reputation at the personal level. To enhance the understanding of reputation, Hsu and Lin (2008) defined reputation as “a degree to which a person believed that participation could enhance personal reputation through knowledge sharing” (p. 68). This definition is adapted for this research.

Previous research in the electronic network of practice showed some similarities and consistency with the theory of social exchange, which provided strong evidence that establishing one’s reputation is an important motivator to participate in network activities (Wasko & Faraj, 2005). Lakhani and Von Hippel (2003) asserted that for gaining status in the electronic network, individuals believed that they should participate actively, and frequently answer and provide useful information to other participants. According to Stewart D (as cited in Wasko & Faraj, 2005), reputation in online settings will lead to reputation in one’s profession. Thus, from the above discussion, it becomes obvious that contributing to knowledge exchange will enhance one’s reputation when they share knowledge with other colleagues.

According to O' Dell and Grayson (1998), it is usually human nature to have a desire to share what you know and make things better. Everyone likes his knowledge and experience to be known, used and acknowledged. Therefore, to encourage a person to share his knowledge, his/her knowledge and behaviour of sharing have to be recognised, as well as motivate him with highly prestigious rewards. Furthermore, in order to encourage employees inside an organisation to share their knowledge with peers, the firm managers should consider knowledge sharing as one of the basic elements that constitute the performance appraisal system. By doing so, the employees' knowledge sharing contribution will be recognised in their job path; therefore, they must show evidence of real knowledge sharing in terms of talk, presentation of topics and conducting training (O'Dell & Grayson, 1998).

Kankanhalli et al. (2005) noted that there is an increasing concern about the importance of reputation in most organisations. He added that in the area of knowledge contribution, the importance of sharing knowledge with others is that it would improve the self-concept of the participants and would encourage them to have more skills and possess valuable experience, which at the end gives them more respect and good reputation among peers. Moreover, employees share their knowledge in organisations in order to be recognised among colleagues as a knowledgeable person (O'Dell & Grayson, 1998). In addition, Kankanhalli et al. (2005) indicated that a person, who proved that he possessed a high quality of skills, enjoys a prestigious status in the work place.

Empirical studies vary in their results regarding reputation. Kankanhalli et al. (2005) noted that image is considered as one of the motivation factors for knowledge contribution. Contrary to his suggestion, the research findings proved that image does not have any association with knowledge contribution. In contrast, the findings of the empirical research by Wasko and Faraj (2005) proved that reputation is a strong

motivator to knowledge contribution. This result is also consistent with prior research results in knowledge sharing motivations and its influence on blog usage, providing evidence that reputation affects the user's attitude towards using a blog (Hsu & Lin, 2008). The results of Hsu and Lin's (2008) study indicate that reputation is a social reward and an intrinsic factor that would motivate knowledge sharing participation in blogs.

2.8.3 Self-Efficacy

The self-efficacy construct has emerged from the social cognitive theory (Gist & Mitchell, 1992). Self-efficacy refers to "an individual's belief in his or her capability to perform a specific task" (Gist & Mitchell, 1992, p. 184). This construct has been recognised as a major predictor explaining work-related effectiveness (Luthans & Peterson, 2002). Moreover, according to Endres, Endres, Chowdhury, and Alam (2007), the self-efficacy theory proved to be one of the best motivators for people and it helps to understand why people tend to share knowledge. Self-efficacy is a kind of self-evaluation that affects one's decision about what behaviour should be used. Generally, self-efficacy plays a critical role in motivating individuals' behaviour (Compeau, Higgins, & Huff, 1999; Hsu et al., 2007; Wasko & Faraj, 2005).

Wasko and Faraj (2005) stated that the cognitive capital theory consisted of individual experience and applying one's expertise. They added that an individual's capability that enables them to use their experience and skills will influence knowledge contribution.

Lin (2007) stated that self-efficacy motivates employees to share knowledge with each other. He added that an employee with confidence in his ability to contribute knowledge is motivated to achieve a certain task or activity. In addition, a person who has high self-efficacy tends to be more motivated to perform a particular behaviour than

a person with low self-efficacy (Kankanhalli et al., 2005; Lin, 2007). Moreover, Hung and Liang (2001) asserted that a person who has strong computer experience is willing to learn and use difficult information systems.

Many researchers use the self-efficacy construct in the area of information systems such as Compeau and Higgins (1995) and Hartzel (2003). The self-efficacy construct was also used in the knowledge management field to prove its influence on knowledge sharing (Endres et al., 2007).

Bock and Kim (2002) argued that self-efficacy is a motivator factor that affects knowledge sharing. The findings of their study showed that an individuals' judgment about their capabilities to contribute to organisational performance related positively to knowledge sharing. Similarly, Kankanhalli et al. (2005) mentioned that self-efficacy, as an intrinsic benefit, would influence knowledge contribution behaviour. The findings of his study showed that knowledge sharing self-efficacy was positively related to knowledge contribution when using electronic knowledge repositories.

Lin (2007) carried out a study to examine the influence of individual factors such as self-efficacy, organisational factors and technical factors on the knowledge sharing process and on firm innovative capabilities. The author used the social cognitive theory model to examine the determinant of knowledge sharing behaviour. The results showed that self-efficacy was positively related to the knowledge sharing process, confirming that intrinsic factors enhanced knowledge sharing behaviour.

Hsu et al. (2007) carried out a study to examine the factors that influence one's knowledge sharing behaviour in virtual communities using the social cognitive theory based-model that consists of knowledge sharing self-efficacy, to investigate the predictor of knowledge sharing behaviour. The participants of the study were members in virtual communities in Taiwan. A web-based survey was distributed and 274

questionnaires were analysed with 28% response rate. The author used the structural equation modelling and confirmatory factors analysis to analyse the data. Findings show that self-efficacy has direct and indirect effects on knowledge sharing behaviour. The study enriches the evidence of the capability of non-monetary factors to promote knowledge sharing.

Endres et al. (2007) conducted a study to examine the influence of the self-efficacy model on knowledge sharing activities in an open source community. In other words, the study focused on the motivational role that the self-efficacy model plays in explaining knowledge sharing behaviour. One of the research propositions suggests that self-efficacy to share complex, tacit knowledge will positively predict knowledge sharing. The results showed that self-efficacy to share complex knowledge strongly affects actual knowledge sharing behaviour.

Luthans and Peterson (2002) examined the influence of employee engagement on managerial effectiveness through the manager's self-efficacy (Figure 2.9). In their study, they proposed that a manager's self-efficacy will mediate the relationship between his or her employees' engagement. Based on multiple ratings of the manager's effectiveness, assuming that the employees engage cognitively and emotionally in their job, the manager will gain more confidence and belief to build an engaged team successfully, which results in a better organisational outcome. This study also assumed that employee engagement might not have total effects on manager effectiveness through the manager's self-efficacy but only might have a partial effect. Thus, self-efficacy will be a partial mediator, not a complete one. For this analysis, the data regression technique was used. The results showed that a manager's self-efficacy has a significant effect on managerial effectiveness. In addition, the findings also support the second hypothesis that the manager's self-efficacy is a partial mediator variable rather than a complete one. Models A (examine the full mediation of manager self-efficacy)

and Model B (examine the partial mediation of manager self efficacy) as in Figure 2.9 that shows the employee engagement and manager self-efficacy that points out the construct’s relationships and the hypotheses discussed above.

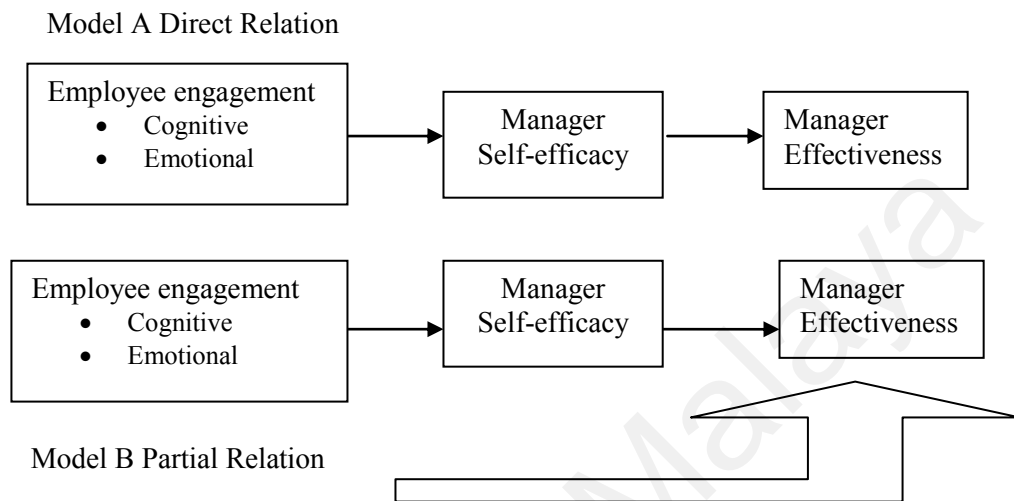


Figure 2.9 Employee Engagement and Manager Self-Efficacy

Source: Luthans and Peterson (2002)

Eventually, self-efficacy may strengthen the relationship between the employee’s engagement and managerial effectiveness, which would seem to provide added value to the workplace and management development. Gist and Mitchell (1992) demonstrated that self-efficacy was an important motivational construct for it influences individuals’ choices, emotions, efforts, reactions and coping skills. In addition, Endres et al. (2007); Hsu et al. (2007); Kankanhalli et al. (2005) and Lin (2007) found that self-efficacy affected knowledge sharing.

It is obvious from the above discussion that self-efficacy is a strong predictor of knowledge sharing. Based on the literature, this research will use self-efficacy as an independent construct in the proposed framework of this research, which will determine the knowledge sharing behaviour of individuals in the organisation.

2.8.4 Interpersonal Trust

Blau (1964) asserted that, in general, trust is an important element in a social exchange relationship. The higher the trust among individuals, the stronger will be the social exchange relationship among them (Chang & Chuang, 2011; Kacmar, Bachrach, Harris, & Noble, 2012; Langfred, 2007; Kiffin-Petersen & Cordery, 2003).

Huotari and Iivonen (2004) stated that social capital depended on human relationships, and that trust is one of its components. Moreover, one of the attributes in the organisation culture is trust among employees (Al-Alawi et al., 2007). Rousseau, Sitkin, Burt, and Camerer (1998) noted that sociologists asserted that trust is a social attribute embedded in the relationship among people. It has been defined as “a willingness to rely on each other”. They added that trust depends on previous experience with a person in related work, which leads to them taking decisions to cooperate with others.

This research adapted Lin's (2006a) definition of interpersonal trust and amended it to suit our study: Interpersonal trust is defined **as *individuals maintaining mutual faith and good intention toward each other while sharing knowledge willingly among them.***

Trust is essential for social interaction and the mutual exchange process, and plays a vital role in the knowledge sharing process (Pai, 2006; Fathi, Eze, & Goh, 2011; McDermott, 1999). In the literature review, trust is often argued to be essential to knowledge sharing and numerous authors believe that people willingly exchange knowledge with each other when trust exists among them (Bakker, Leenders, Gabbay, Kratzer, & Van Engelen, 2006; Chang & Chuang, 2011; Papadopoulos, Stamati, & Nopparuch, 2013; Wu & Sukoco, 2010). Moreover, Abrams et al. (2003) noted that interpersonal trust can establish a strong foundation for learning and knowledge

transfer. Pai (2006) noted that trust is an important construct in the social exchange process among stakeholders. He added that when trust is established among the stakeholders, they will share knowledge successfully. Moreover, Luna-Reyes, Cresswell, and Richardson (2004) noted that the level of trust among individuals influenced the effectiveness of knowledge sharing within the organisation.

Zarraga and Bonache (2003) noted that the success of teamwork in an organisation can be considered as a social asset that emerges from mutual trust and good relationship between all the team members. This takes time to be build, and the transfer of this asset to other organisations is not applicable. Also, Currie and Kerrin (2003) asserted that trust is a key ingredient among employees to encourage them to share knowledge, and through an informal network, graduates and a few members of senior staff would be able to build a strong social relationship with others who mutually trust them. Consequently, this social relationship facilitates successful knowledge sharing among them.

Vithessonthi (2008) asserted that when there is a high level of interpersonal trust among employees, they will exchange knowledge and this action positively relates to their attitudes toward knowledge sharing behaviour in a multinational corporation. The author added that transfer of knowledge inside the organisation is incomplete without considering the interpersonal relationship between the members of the organisation. Moreover, when trust is revealed among employees, they feel comfortable to share knowledge willingly. In addition, he suggested that the interpersonal trust among employees enhanced their attitudes toward knowledge acquisition and encouraged knowledge sharing.

Truch (2001) argued that when a person knows for certain and is guaranteed that his knowledge shared with others would be welcomed usefully and is recognised as

his knowledge and will not be misused, then at this point his trust on the other party would be worthy when he decides to share knowledge with them. According to Truch, knowledge sharing with others depends on how much trust a person can put on the other party. Moreover, the culture and the environment of the organisation must be supported to increase knowledge sharing behaviour.

Lee et al. (2006a) indicated that learning between partners and deciding to exchange knowledge under certain circumstances are based on trust. It involves willingness to make one's self weak in front of others and consists of trust in the other's competence, honesty and intention concerned (Sharratt & Usoro, 2003). Therefore, trust can be viewed as a true belief in others' good intentions, capability, and reliability (Kankanhalli et al., 2005).

Lin (2006a) attempted to examine the effects of organisational support on the intention to facilitate knowledge sharing through constructs (organisational perception and interpersonal trust). The author referred to interpersonal trust as a willingness of one party to be vulnerable towards the action of another one, with an intention to interact with faith, directly or indirectly with the other party. According to the argument of Abrams et al. (2003), trust is an essential element that enhances knowledge sharing effectiveness and is a prominent factor that determines the nature of the interaction between people. In other words, employees will contribute to knowledge sharing if there is a strong mutual trust between them.

In another study by Ma et al. (2008), examine the impact of some contextual factors (trust was one of them) that influence knowledge sharing behaviour in a project team from China construction companies. The results showed that trust was the only variable among the contextual factors that had strong significant influence on knowledge sharing behaviour. Likewise, Zarraga and Bonache (2003) found that

mutual trust was the most effective component that encouraged knowledge transfer in the work team.

Al Alawi et al. (2007) conducted a study to investigate the impact of some factors such as interpersonal trust and organisational culture on the success of knowledge. The data was collected from staff in public and private organisations in Bahrain. 300 questionnaires were distributed and 231 were used with 77% response rate. The authors used a SPSS software package to analyse the data. The results indicated that trust was positively related to knowledge sharing, which means that the employees required trust among them to respond openly and share knowledge easily with colleagues.

Lee et al. (2006a) carried out a study to examine the effects of the organisational climate maturity on knowledge management performance, which was measured by knowledge quality and the knowledge sharing level. The data was collected by distributing 920 questionnaires to Korean organisations. 365 questionnaires were returned with 38% response rate. The data was analysed by using partial least square. The findings showed that despite the literature focusing on the crucial role of trust among the employees in the organisation, there was no relationship between trust and the knowledge sharing level. This result is consistent with Hsu and Lin's (2008) findings, which showed there was no relationship between trust and the attitude toward using a blog. The authors did not justify the non-significant result between trust and the knowledge sharing level. The likely justification of the result might be due to the culture of the population of the study. Consistent to these results, Kankanhalli et al. (2005) in his study, examined the cost and benefit factors that influence electronic knowledge repositories usage by knowledge contributors. The study proposed that codification efforts are negatively related to electronic knowledge repositories usage by knowledge contributors when generalised trust was weak. The findings showed that codification

efforts and knowledge contribution had a significantly negative relationship with electronic knowledge repositories when generalised trust was weak.

Bakker et al. (2006) investigated the role of trust in knowledge sharing. They asserted that researchers in social capital view trust as an important factor that facilitates and explains knowledge sharing. The study explored the extent to which the three dimensions of trust (capability, benevolence and integrity) explain knowledge sharing in new product development teams. The data was collected via questionnaires given out in large consortia that developed new products in the area of space science. There was a 72% response rate and the multiple regression technique was used to test the hypothesis. The results showed that trust alone did not explain knowledge sharing in the new product development team. Once they included team membership, the results showed significant relationship. The authors justify that trust might be a provision for sharing knowledge but does not have significant effects on knowledge sharing by itself. They concluded that team membership has a strong influence in explaining which members share knowledge more than others and the team members when they spent more time together, tended to share more knowledge with each other than new members do. Therefore, trust is less important to team members, especially in new product development teams.

Pai (2006) conducted a study to examine the influence of knowledge sharing behaviour on information systems and information technology strategic planning, in addition to investigate what factors influence knowledge sharing behaviour among stakeholders (such as trust among stakeholders). The data was collected from 805 executive directors of information system and information technology in large companies in Taiwan. The questionnaires were sent by email to all of the participants. 151 questionnaires were returned and with 19% response rate. The hypothesis was tested by using the multiple regression analysis. The findings of the study indicated that

trust among stakeholders have a positive relationship with knowledge sharing behaviour.

Lee et al. (2008) conducted a study to investigate the influence and the role of mutual trust between client and outsourcing providers of information technology, and how the relationship was facilitated through knowledge sharing. The data was collected from service receivers and the providers through a self administrative questionnaire, which was distributed to top executives of service receivers and vendor representatives in Korea. Structural equation modelling was used to analyse the data. The findings showed that mutual trust was positively related to knowledge sharing. When mutual trust becomes real between receivers and providers, the knowledge will flow easily between them.

Wu et al. (2009) investigated the relationship between interpersonal trust and knowledge sharing behaviour. Interpersonal trust included trust of individuals and trust of managers. The context of the study was based on the research and development team in technical industries in Taiwan. The sample used was 297 employees and the statistical technique used to analyse the data was hierarchical regression. The results showed that trust was very crucial in knowledge sharing, which is consistent with previous studies (Al-Alawi et al., 2007; Lee, Huynh, & Hirschheim, 2008; Lin, 2006a). Furthermore, Politis (2003) conducted a study to investigate the effects of the dimensions of interpersonal trust on knowledge acquisition and then, team performance. The main aim of the study was to examine the influence of interpersonal trust on the employees' understanding of knowledge sharing and how this influenced team performance. The data was collected by distributing questionnaires to the members in management teams in aerospace manufacturing organisations in Australia. 280 questionnaires were distributed and only 239 were used with 85% response rate. The author used the structure equation modelling to analyse the data. The results showed

that most of the dimensions of interpersonal trust were positively associated with knowledge acquisition and were important in the process of cooperation and knowledge sharing. The results confirmed the idea of trust as an essential element of knowledge sharing.

2.8.5 Humility

The theory of virtue of Aristotle focused on a person's good character and his traits that influenced attitude and beliefs, and then affected the act and behaviour of a person. Moreover, character traits explain the way a person acts (Sherman, 1991).

Generally, humility is the lack of feeling of superiority, arrogance and haughtiness of a person towards other people. It is treating all people regardless of who they are, with respect, gentleness, kindness and forgiveness.

Tangney (2000) described that dictionaries often give humility a negative meaning such as low self-esteem and negative self-views. In contrast, humility could be looked upon as a virtue and personal strength, as has been described by some writers (Emmons, 2000; Exline & Geyer, 2004; Vera & Rodriguez-Lopez, 2004).

Humility has been described from a positive aspect, i.e. with emphasis on strength rather than weakness. According to Exline and Geyer (2004), many people looked at humility, positively from a social view, as facilitating the role to cooperate and share, especially with closed ones such as colleagues, friends and family.

Authors defined humility in different ways. This study adopted the definition of humility by Morris, Brotheridge, and Urbanski (2005).

Morris et al.(2005) noted that theological and social psychology literatures agreed that humility can be considered as a human virtue and defined humility as “*a personal orientation found on a willingness to see the self accurately and a propensity*

to put oneself in perspective and it involves neither self abasement nor overly positive self regards” (p. 1331) . He added that this definition contains three dimensions. The first dimension is self-awareness that is the capability to evaluate one’s strengths and weaknesses. The second dimension relates to the openness which facilitates the acceptance of new ideas, ways of thinking and understanding. The third dimension of humility is the transcendence that indicates the acceptance of the impression that something is greater than focusing on oneself; the ability to evaluate, appreciate and recognise others; positive thinking and other such functions.

In describing the term humility, Tangney (2000) indicated that there are key elements formulating one’s humility. These elements include the evaluation of a person on his abilities without exaggeration and on the other hand, having the capability to accept one’s mistake. In addition, a person must be open-minded to recognise new ideas, strange notions and accept others’ advice. Moreover, a person must see himself as one person in a large world. Relatively, self-denial is required, but takes into account the person is an integral part of the world. At the end, a person must appreciate and evaluate others in a way that recognises that they can add valuable contribution to our world.

In the theory of virtue of Aristotle, he mentioned that virtue is a characteristic trait of a man that affects his behaviour and act (Sherman, 1991). Morries et al. (2005) noted that early writing on humility showed that this term emerged from the Greek Stoic tradition, as well as, from the teachings of Buddhism and Taoism. Moreover, early Greek philosophers looked to humility as a virtue that is a good trait in behaviour.

Many cultures and most religions such as Islam, Christianity, Judaism, and Buddhism, if not all, view humility a virtue. However, researchers regard humility as a

virtue and a strong positive construct that has an influence on relationships (Kupfer, 2003).

Morris et al. (2005) asserted that many authors in behavioural organisational science considered humility as a source of competitive advantage. Others argued that it is a leadership trait that might contribute to organisation performance. Morris et al. (2005) said that traditions in Islam, Christianity and Buddhism emphasised their teachings and learnings on humility, and generally must submit to God. For example, Buddhism and Taoism teachings considered humility as essential to human virtue, as it enables oneself to be free from selfishness, which can be obtained partially through humble thinking. Similarly, humility in Christianity is considered as a state of humbleness that greatly relies on the low estimate of one's self importance. For instance, according to Paul (Romans 12:3) (as cited in Morris et al., 2005), "one should not think of himself more highly than he ought". In Islam, the Holy Qur'an states: "*So by mercy from Allah, [O Muhammad], you were lenient with them. And if you had been rude [in speech] and harsh in heart, they would have disbanded from about you. So pardon them and ask forgiveness for them and consult them in the matter. And when you have decided, then rely upon Allah. Indeed, Allah loves those who rely [upon Him]*" (Holy-Qur'an, 3:159)

In addition, Comte-Sponville (as cited in Morris et al., 2005) noted that humility arises from the awareness and accurate understanding about one's strengths and limitations. In this manner, to be humble and gentle, a person must follow the truth from anyone and appreciate the true value of everything. Thus, humility as a human trait requires accurate self-evaluation and the belief that all people have a positive worth that others should respect (Morris et al., 2005).

According to Lee et al. (2003b), a person who possesses high score on humility will be less harmful to others and always look to other interests. In the same way, the behaviour of one who has high level of humility might serve as a potential promotional basis for him/her to share knowledge with others.

Moreover, Davenport and Prusak (1998a) noted that knowledge project managers need certain humility to ensure the smooth flow of knowledge in the organisation. Furthermore, Vera and Rodriguez-Lopez (2004) argued that humility rendered a strategic value to the organisation by providing the members in the organisation with clear and real perspectives of themselves. Moreover, it would strengthen the behaviour of the leader who possesses it. He added that many leaders recognised that the virtue of humility is extremely valuable in their business such as Sam Walton, the founder of Wall Mart Stores and Ingvar Kamprad, the establisher of IKEA group. They noted that humility, as an organisational behaviour, positively influenced firm performance, although the virtue of humility has been used in philosophical debates since a long time ago, but is rarely used in the managerial area. More focus should be given to the virtue of humility as it strengthens the human behaviour, which ultimately leads to improvement in performance.

Some organisations look to the virtue of humility as a strategic critical source for competitive advantage, for it is rare and difficult to be imitated. In this sense, Vera and Lopez (2004) proposed that humility is an essential source of competitive advantage that strengthens the organisation strategy in achieving its goals and supporting its values. In addition, it plays an important role in the organisation's learning, flexibility and quality of service, which are provided to customers and employees as well. These processes are a natural outcome of the trait of humble behaviour, which guides the organisation to achieve outstanding performance. They pointed out that organisational learning has been described as a capability of collecting new knowledge and ideas in

individuals or groups, and implementing them in the organisation's system and culture. Quality Service refers to the success in reaching the customers and the employee's satisfaction. On the other hand, an organisation's flexibility shows the capability of the organisation in dealing with changes and survival for the long run. As mentioned earlier, humility or humble behaviour positively influences a firm's performance because it contributes to high productivity when individuals discuss the work openly and organise it properly. Therefore, humble behaviour is an opportunity that increases individual commitment to the firm and ultimately leads to customer satisfaction and improvement in the long term growth of the organisation.

Collins (2005) examined what influenced the company to move from good to exceptional performance. He found that humility of the executive leaders was the reason behind excellent performance, and not because of the executive leader's profiles.

Rowatt et al. (2002) in examining the relationship between religiousness and the virtue of humility, asserted that when people rated themselves and others regarding personal traits, for instance, 50% and above will be above average on wishing traits and below average on undesired attributes. Therefore, to estimate humility, it will be clear if the evaluation of self and others reach the minimum estimation, or under valuing will indicate higher level of humility.

Tangney (2000) argued that socialists and psychologists have a different meaning of the humility construct. To be humble does not mean to have a low opinion on oneself but is to have an accurate opinion on oneself, the understanding of one's imperfections and to get rid of arrogance, as well as, low self-esteem. According to Tangney, humility represents the talent and ability to share with others, who also have a role to play. In addition, humility shows that people have wisdom and knowledge but is limited to their own perspectives. Therefore, people have to be open-minded, willing to

acknowledge one's mistakes, accept and listen to other's opinions, advices and wish to learn from others.

According to Means, Wilson, Sturm, Biron, & Bach (1990), humility has been explained as an obvious increase in assessing other people's character and not a decrease in the assessing of oneself, in terms of showing the willingness to accept one's inadequacies, the inability to control all interpersonal interaction, and the availability of patience, empathy as well as gentle attitudes toward others.

Sandage and Wiens (2001) view the expression of ego-humility as a practical orientation to self and others that needs a willingness to admit one's strengths and to recognise one's limitations. Exline and Geyer (2004) proposed that humility included the willingness to notice the self correctly from both sides: strengths and weaknesses.

Exline and Geyer (2004) predicted that a view of humility would be linked with religiosity as many religions regard humility as a virtue. They added that even religiosity has been linked to virtues in term of forgiveness. For example, the Holy Qur'an states: "*O you who have believed, indeed, among your wives and your children are enemies to you, so beware of them. But if you pardon and overlook and forgive - then indeed, Allah is Forgiving and Merciful*" (Holy-Qur'an, 64:14). In their findings, humility was perceived as a virtue that strengthens the social role that focuses on positive social relationships.

Despite the huge literature about humility, it has attracted less researchers' attention in social science, especially in knowledge sharing. Humility is regarded as a virtue in many religions and cultures, but has not gotten enough research. Although there are extensive researches in knowledge sharing, intrinsic motivations and religiosity, research up to date, has not focused on the relationship between humility and knowledge sharing behaviour.

This research specifically emphasises on the relationship of non-monetary motivations, of which humility is one of them, and knowledge sharing behaviour. Therefore, this research will focus on the social role of humility, arguing that a person with humility will appreciate others' thinking, knowledge and help. Thus, it would encourage the cooperation and knowledge sharing among colleagues.

2.8.6 Religiosity

Religiosity in organisational behaviour positively influences a firm's performance (Ibrahim & Angelidis, 2005). In many studies, authors refer to religiosity as religion commitment or the level of religiousness (Essoo & Dibb, 2004; Hicks & King, 2008). According to Alhabshi and Agil (as cited in Mokhlis, 2006a), the interrelation between religious beliefs and behaviour comes from the commitment and obligation of people to a certain religion. For instance, consuming alcohol is prohibited to the followers of Islam and eating beef is forbidden to Hindus believers. Moreover, religiosity also has a positive impact on hardworking behaviours (Elçi, Sener, & Alpan, 2011). Highly religious individuals who are strongly committed to their beliefs would likely behave in compliance with the rules and norms of their religion (Mokhlis, 2006a; Rusnah, Devi, & Ghani, 2006). According to Worthington Jr et al. (2003), religiosity is "the degree to which a person adheres to his or her religious values, beliefs and practices and uses them in daily living" p. 85. The supposition is that a highly religious person will evaluate the world through religious schemes and thus, will integrate his or her religion into much of his or her life. Religiosity can be defined in a simple, obvious and direct manner as "the degree to which beliefs in specific religious values and ideas are held and practiced by an individual" (Delener, 1990, p. 27). This definition of religiosity has been adopted in this research. It is clear from the above definition that religiosity shows the commitment of an individual towards certain beliefs

and values of a particular religion, to become a complete way and behaviour of life through its norms and teachings.

Several studies investigated the relationship between religiosity and consumer behaviour. According to Delener (1990), findings on various research provided the supposition that religiosity has a significant influence on consumer decision making. Results revealed that a husband in a Catholic household was the major decision-maker in most buying decisions. While in Jewish households, both husbands and wives were equally responsible in buying decisions. Moreover, results show that in pro-religious households, husbands were the major influence in making buying decisions for durable goods. In contrast, in non-religious households, husbands and wives make the decisions of buying jointly.

Another research explored the impact of religiosity on shopping orientation. Mokhlis (2006a) conducted a research in consumer behaviour to investigate the effects of religiosity on shopping orientation. He noted that religion is one of the individual's determinants that affect consumer behaviour towards shopping. The data was collected by distributing survey questionnaires to 300 respondents in the municipal area of Kuala Lumpur, where 26 questionnaires were ruled out. To analyse the data, factor analysis was used to reduce the large number of items in religiosity and shopping orientation to a controllable number of components. The factor analysis came with two factors named as intrapersonal and interpersonal. Then analysis of variance (ANOVA) was used to test the effects of religiosity on each factor of shopping orientation. The findings of the study showed that three factors of shopping orientation behaviour (price conscious, quality conscious and impulsive shopping) were consistently related to religiosity.

Poulson, Eppler, Satterwhite, Wuensch, and Bass (1998) examined the strength of religious affiliation on the influence of drinking patterns and risky sexual behaviours

of 210 postgraduate and undergraduate students at a public university in the “bible belt”, considered as a conservative one in the U.S. The author asserted that religiosity or religious affiliation may contribute to an individual’s decision about drinking alcohol and engaging in risky sexual behaviour. The results indicated that the strength of religiosity played a vital role in decisions about drinking alcohol and engaging in sexual activity. Women with strong religious affiliation consumed less alcohol and engaged less in unsafe sexual behaviour than females with less religiosity. Men who had religious conviction were not significantly associated with drinking alcohol and engaging in risky sexual behaviour. The findings confirm the effects of religiosity on behaviour, but to a different extent between genders.

Similarly, a study was carried out by Mattila, Apostolopoulos, Sonmez, Yu, and Sasidharan (2001) on 534 university students in the U. S. to investigate the impact of gender and religiosity on college students’ spring break behaviour, using the ANOVA method for data analysis. The findings of this research suggested that the variations in students’ religious beliefs (liberal or conservative) significantly related toward their drinking, drugs and casual sex behaviour. The study proved the effects of religious strength and its variations between dissimilar student groups, in terms of gender and their way of thinking, whether liberal or conservative.

Ong and Moschis’ (2006) research examined whether the relationship between religiosity and consumer behaviour occurred due to religious beliefs or due to other various factors related to religiosity. Their assumption was that the relationship between religiosity and consumer behaviour was mixed with age-related factors. The empirical study was done among respondents aged 55 years old and above, from five cities in Peninsular Malaysia and the questionnaires were distributed to 645 respondents. The results indicated that religious beliefs did not relate positively to consumer behaviour, namely on brand and store preferences. The authors’ findings suggested that previous

studies showed significant relationship between religiosity and consumer behaviour, which might be due to age related factors. The age factor might have played a role in influencing consumer behaviour. On the other hand, the religiosity among different age groups might also be a vital factor in predicting consumer behaviour.

Various empirical studies suggested that religious affiliation has an impact on managerial behaviour. A study on Christian business students from five U.S. universities was conducted to investigate whether individuals' degree of religiousness had a positive relationship on their corporate social responsiveness. The findings indicated that there was a significant relationship between the level of religiosity and individual attitudes toward economic and ethical dimensions of corporate social responsiveness (Angelidis & Ibrahim, 2004).

Delener (1990) conducted a study to investigate the influence of religiosity on a certain aspect of consumer behaviour (purchasing decision behaviour). The population of the study were the Catholic and Jewish households in the northeast of the U.S. who bought new cars and microwaves a year ago. He used cross-tabulation and the multivariate analysis of variance to examine the hypotheses. The findings revealed that the individuals' level of religious orientation significantly affected the level of risk in purchasing decisions. Delener (1990) confirmed the existing thinking about the significant effects of religiosity towards purchasing decision behaviours.

Moreover, Essoo and Dibb (2004) clarified that studies in marketing literature argued that one of the strongest elements that affected one's behaviour while making buying decisions was religion, which cannot be underestimated as it has been argued that spiritual qualities which consist of religion and beliefs establish the fundamental behaviour of a particular religious group. The purpose of their research was to examine the influence of religion on shopping behaviour. The main standpoints of the research

were first, religion affiliation, which refers to the association of an individual to a certain religion, and second, religion commitment, also called “religiosity” in many studies, which refers to the degree of religiousness, beliefs and practice of an individual of a specific religion’s value and beliefs. The findings of the research concluded that the principles, beliefs and practices of the three main religions in the study - Islam, Christianity and Hindu - were affecting their purchasing behaviour. The findings gave support for the notion that religion is an important construct in predicting consumer behaviour.

Another study by Sood and Nasu (1995) in their empirical study noted that since religion is one of the important elements of culture (Delener, 1994), it might affect consumer behaviour for the reason that it directly influences an individual’s behaviour by the norms and the values of the religion. The main purpose of the study was to investigate the degree of religiosity and nationality (Japanese and American) influences on consumer behaviour. The findings of the study indicated that religiosity of the American protestant was a significant element in predicting consumer behaviour. They concluded that religion is a strong determinant of behaviour, which is considered as acknowledging the strong influence of religiosity in predicting human behaviour.

Hicks and King’s (2008) study pointed out that past research focused on the idea that a meaningful life led to a good level of wellbeing. Positive effect is one aspect of wellbeing which enhances the meaning of life. In addition, they noted that religion has been recognised as a main source of giving meaning to life, providing a person with value, beliefs, and expectations. The main aim of their study was to examine the moderating effects of religiosity on the relationship between positive effects and meaning in life. The findings revealed that the relationship between positive effects and meaning in life was moderated positively by religious commitment or religiosity. These findings support the notion that an individual’s high level of religious commitment,

which is considered as an important source of information, influenced their life meaning.

Delener (1994) asserted that religion was an aspect of culture and has an influence on individuals' values, attitudes and life style, which in return affects their decisions and behaviour. He noted that religiosity has been recognised as a strong construct that affects buyer's behaviour and promotes the emotions of the individual while solving problems and making decisions. Delener (1994) suggested that individuals with high level of religiosity were behaviourally able to make decisions consistent with proper ethics. The main purpose of his study was to explore the differences in the marital role of Catholic and Jewish, pro-religious and non-religious households related to consumer decision making. The findings showed that the differences in behaviour vary according to religious affiliation and religious orientation. In other words, there was a significant relationship between religious orientation and the patterns of decision behaviour. For example, the results suggested that in pro-religious Catholic households, husbands and wives together make the decision of buying a car, whereas, in pro-religious Jewish households, husbands and wives make the decision to buy a car respectively.

Singhapakdi, Marta, Rallapalli, and Rao (2000) indicated that religiousness has been related to ethical norms that people may behave in their judgment in right and wrong, according to their religious and beliefs. He added that religion generally denied people from doing things to harm others. The main purpose of his study was to examine the effects of religiousness on various factors of marketing professionals' ethical decision making (personal moral philosophies, perceived ethical problems, and ethical intentions). The sample of the study was the American members from the American Marketing Association. The findings of the study revealed that there was a positive relationship between a marketer's religiousness and their perception of ethical problems

and their behavioural intentions. Moreover, the results also showed that religiousness had a positive influence on the personal moral philosophy of the marketers. These findings provided evidence that religiousness was one of the aspects that constituted the moral and ethical behaviour of the marketers.

Another empirical study by Baier and Wright (2001) examined the effects of religion on crime. They asserted that individuals with high religious commitment were more likely to feel shame from doing bad acts. The results showed that an individual's religious behaviour and beliefs had significantly and negatively, moderate and preventive effects on the criminal behaviour of individuals.

From the above discussion from various researches, the relationship between religiosity and behaviour has been widely explored. The findings of the above researches highlighted the importance of the religion construct as a predictor of human behaviour. The results showed the significant impact of religiosity on various aspects of behaviour, consumer behaviour, decision making, shopping orientation, sexual behaviour, spring break behaviour, managerial behaviour, meaning in life behaviour, intention and crime behaviour, etc. The only findings that related the relationship between religiosity and consumer behaviour, particularly from the aspect of brand and store preferences, was age-related factors and not religiosity itself, according to the authors' justification (Ong & Moschis, 2006).

Persons with high religiosity seemed to have strong commitment to their values and beliefs, and behaved in life accordingly under the control of teachings and norms of their religion. How strongly committed individuals are to their religion should be taken into account in understanding and explaining knowledge sharing behaviour. From these literatures and to the present moment of writing this research, no study has investigated the relationship between religiosity, non-monetary variable and knowledge sharing

behaviour, which could be considered as a contribution to the field of knowledge sharing. However, in the present study, the author examines the moderating effects of religiosity on the relationship between non-monetary variables and knowledge sharing behaviour.

Choosing religiosity to play a moderating role in the framework of this study, based on various evidence from previous literature. For instance, Korn and Zukerman (2011) examine behavioural changes of students after exposure to violence events, and investigated the role of religiosity on those human behavioural changes. Their findings proved that religiosity moderates behavioural changes after exposure to violence events. Moreover, public religiosity significantly interacted with community violence to predict substance abuse (Fowler, Ahmed, Tompsett, Jozefowicz-Simbeni, & Toro, 2008). In other words, religiosity believed to be an important protective on the reduction of substance abuse behaviour. Similarly, “a significant interaction emerges between sex and religiosity with regard to general attitudes towards physician assisted suicide” (Kaplan et al., 2008). In the same vein, religiosity proved to be a moderating factor on the relationship between genetic influences and the decrease in the liability for smoking behaviour. Therefore, religiosity considered as a protective factor against smoking behaviour (Timberlake et al., 2006).

2.9 Theories Related to Knowledge Sharing Behaviour

At present, knowledge sharing behaviour is becoming an attractive topic in the area of knowledge management, inducing researchers to explore it. Connelly and Kelloway (2003) stated that knowledge sharing is a group of behaviours that requires exchange of information and helping each other. Bock et al. (2005) indicated that knowledge exists inside individuals, those who create, organise, archive and implement knowledge while doing their daily routine work. Therefore, to share this knowledge in

the organisation and exchange it among the employees and benefit from it mainly depends upon the knowledge sharing behaviour of the employees.

Pai et al. (2006) reported that to study the factors that predict knowledge sharing behaviour, researchers employ many theories such as the social exchange theory, social cognitive theory, theory of reasoned action, theory of planned behaviour and theory of economic exchange. However, in this study, the social exchange theory is used to examine the intrinsic factors or the non-monetary rewards that are influencing knowledge sharing behaviour, from a religiosity perspective.

The theory of planned behaviour of Ajzen has been used in the field of information systems to explain an individual's social behaviour, as adapted by Lin and Lee (2004) to examine the factors that encourage knowledge sharing intention and behaviour. Furthermore, Kankanhalli et al. (2005) also used two theories - the social exchange theory and social capital theory - to identify both cost and benefit (i. e. intrinsic and extrinsic) factors that influence electronic knowledge repositories usage by knowledge contributors. In addition, Bock et al. (2005) used the theory of reasoned action to explain the construct that influenced or inhibited knowledge sharing intentions. Bartol and Srivastava (2002) suggested that in order to examine the role of monetary rewards in motivating knowledge sharing; they used the economic theory. Therefore, from the above mentioned theories, it can be seen that several theories are used in identifying knowledge sharing behaviour and the factors that are affecting it. This study used a combination of theories: social exchange theory, social cognitive theory, social capital theory, and theory of virtue.

2.9.1 Social Exchange Theory

According to Blau (1964), the social exchange theory was built up to explain and understand mutual human behaviour. The theory suggested that individuals

exchange and share their services with others to benefit from what they gain in return (Amin, Zawawi, & Timan, 2011). What they exchange is not necessarily tangible in nature such as goods or wealth, but it could be intangible or intrinsic rewards such as courtesies, entertainment or the enjoyment of helping others. From the view point of the theory, in many cases social association was intrinsically rewarded. For example, friends enjoy the mutual relationship between them when they do things together. Such relationship could be sharing experience with each other. Therefore, the study found that even a social relationship can be rewarding. People often provide their help to others as a favour. They obtain pleasure and gratefulness when doing so. This pleasure is a social reward. This social reward makes doing favours for others enjoyable. Consequently, when a person renders a favour to another, the other person feels an obligation to return that favour. This mutual exchange of favours will strengthen the relationship between them. Accordingly, such relationship which consists of exchange of favours is considered as social exchange.

2.9.2 Social Cognitive Theory

The social cognitive theory is a model of individual behaviour which is widely recognised and empirically validated (Compeau & Higgins, 1995). According to Bandura (1982), the social cognitive theory consists of various determinants that are integrated with each other (environmental events, personal factors, cognitive and behaviour). He noted that theorists who considered humans as possessing capabilities, used research models to highlight the behaviour of how people can influence their own motivation through self-influence. Bandura (1982) explained that the social cognitive theory focused on the inner capability of a person and his self-evaluation that motivates him to accomplish a specific task. Therefore, the theory is the personal judgment integrated to evaluate generated capabilities such as cognitive, social, experience, and behavioural sub-skills for making decisions or performing a particular task. One of the

significant dimensions of the social cognitive theory is what Bandura calls “self-efficacy”. As Bandura (1986) mentioned, self-efficacy might influence an individual’s ability to perform a specific behaviour.

2.9.3 Social Capital Theory

Blau (1964) asserted that, in general, trust is an important element in a social exchange relationship. The more the trust among individuals, the stronger will be the social exchange relationship among them. Moreover, the social capital theory is concerned with the importance of relationships between people as a main source of social action (Nahapiet & Ghoshal, 1998). According to Nahapiet and Ghoshal (1998), the social capital concept comes from community studies concerning personal relationships among people, which had been established on the basis of trust. They added that researchers found that social capital enhanced cooperative behaviour and facilitated communication and exchange. Therefore, it improved the efficiency of people coordination (Kankanhalli et al., 2005).

2.9.4 Theory of Virtue

The theory of virtue of Aristotle focused on a person’s good character and his traits that influenced attitude and beliefs, which then affected the act and behaviour of a person. Moreover, character traits explain the way a person act. In addition, a good character or virtue leads a person away from vice acts (Sherman, 1991), and then helps in understanding his past actions and is used as an enabler to predict future behaviour (Sarros, Cooper, & Hartican, 2006).

According to the ethical theory of Aristotle, moral virtue is developed by habits and not planted in a human being by nature, for human nature can be changed by habits. Human virtue leads a person to perform his own work well. The human virtue or excellence appears in the social behaviour of the human being and has several

characteristics such as gentleness, forgiveness, and friendliness (Ostwald, 1962b). Morris et al. (2005) explained that in philosophical and social psychology literatures, humility is considered as a human virtue that reveals constant character traits.

2.10 Research Gaps

Firstly, in many organisations, monetary rewards are made to encourage knowledge sharing behaviour among employees according to merits pay (Bartol & Srivastava, 2002). This practice proved to have temporary influence in knowledge sharing behaviour. Confirming the above mentioned view, the insignificant relationship of incentive rewards (extrinsic rewards) towards knowledge sharing behaviour is found in the empirical study of (Bock & Kim, 2002). It was noted in previous studies that the non-monetary factor had attracted little attention in predicting knowledge sharing behaviour. So, it is encouraging to carry out further research on non-monetary factors in order to increase the understanding of these constructs in the field of knowledge sharing behaviour. Therefore, to fill this gap, four non-monetary factors were combined together: the enjoyment of helping others and reputation variables representing the social exchange theory; the self-efficacy variable representing the social cognitive theory; and the interpersonal trust variable representing the social capital theory.

Secondly, in order to expand on non-monetary factors, this study derived the humility construct from the theory of virtue, which has not been examined before in the context of knowledge sharing. The humility construct was added to the above mentioned non-monetary factors. Therefore, all the five non-monetary factors representing four theories were used in the research model in explaining knowledge sharing behaviour.

Thirdly, various studies proved that religiosity had a strong influence on human behaviour (Delener, 1994; Mokhlis, 2006a; Ezzo & Dibb, 2004; Poulson et al., 1998).

This strong relationship between religiosity and various issues of human behaviour guided this study to use the religiosity construct as a moderator influencing the relationship between non-monetary factors and knowledge sharing behaviour. There was a lack of studies of religiosity as a moderator variable between non-monetary factors and knowledge sharing behaviour. Thus, this research investigates such issue which improves the behaviour of knowledge sharing among postgraduate studies.

University of Malaya

CHAPTER THREE

METHODOLOGY

3.1 Introduction

The major purpose of this study is to provide a better model of different non-monetary motivation factors that encourage knowledge sharing behaviour among postgraduate students within Malaysian public universities and to relate the influence of these factors with knowledge sharing behaviour. This study also seeks to evaluate how religiosity moderates the relationship between non-monetary factors and knowledge sharing behaviour (Wasko & Faraj, 2005).

Several studies have examined knowledge sharing behaviour in countries such as Taiwan (Hsu et al., 2007; Kuo & Young, 2008; Lin, 2007; Lin & Lee, 2004), Singapore (Kankanhalli et al., 2005), Greece (Chatzoglou & Vraimaki, 2009), Korea (Bock & Kim, 2002; Bock et al., 2005; Lee, 2001) and the United States (Wasko & Faraj, 2005). The authors investigate factors affecting knowledge sharing such as the organisation rewards system, organisation climate, senior manager's perceptions, top management support, environmental factors, personal factors, technological factors, psycho-social factors, personal interest and social context. Noor and Salim (2011) reported in their conceptual study that studies related to knowledge sharing are rarely done in public organization in Malaysia. Along the same lines, Suhaimee et al. (2006) stated that knowledge sharing in public universities among post graduate students was still at its early stage in Malaysia.

3.2 Research Philosophy

There are two broad paradigms that have been used widely in social science research, known as the positivist and interpretive approaches (Baker, 2001; Ticehurst & Veal, 2000). Some researchers apply one of the two approaches, whereas others prefer to use the two philosophical approaches. The multiple philosophical paradigms create a worry among social scientists as it is considered an obstacle to the development of science (Neuman, 2007). In contrast, other schools of philosophy integrate the two approaches (Lee, 1991).

Neuman (as cited in Mokhis (2006b, p. 176) defined positivist as “an organised method for combining deductive logic with precise empirical observations of individual behaviour in order to discover and conform a set of problematic casual laws that can be used to predict general pattern of human activity”. This approach describes the relationship between facts and events statistically, to test that the casual theory and replication of studies is the final test of knowledge (Neuman, 2007).

The explanation of the differences between the positivist and interpretive approach in the light of these three main characteristics, namely ontology, epistemology and methodology is displayed on Table 3.1 (Carson, Cilmore, Perry, & Gronhaug, 2001).

It is obvious from the literature review that the positivist paradigm was used widely in social science (Neuman, 2007). In general, it is by setting up a model that this study will be able to enhance and increase the predictive and understanding of knowledge sharing behaviour.

This approach of understanding is called positivistic philosophy, where this study examines empirically the theories, social and intrinsic human factors that affect the behaviour of knowledge sharing among postgraduate students in Malaysian

universities. Therefore, the approach adopted in this research is positivistic. The reason behind choosing the positivistic approach is that the positivist research paradigm is largely used in social science. In addition, the positivist researchers believe that large-scale samples and the survey approach that are statistically examined, are suitable and acceptable research methods (Chua, 1986).

Table 3.1 : Broad Definition/Explanation of Positivist, Interpretive, Ontology, Epistemology and Methodology		
	Positivist	Interpretivism
Ontology Nature of 'being'/ nature of the world Reality	Have direct access to the real world.	No direct access to the real world.
Epistemology 'Grounds of knowledge/ relationship between reality and research	Possible to obtain hard, secure objective knowledge. Research focus is on generalisation and abstraction. Thought is governed by hypotheses and stated theories.	Understood through 'perceived' knowledge. Research focuses on the specific and concrete. Seeking to understand specific context.
Methodology Focus of research Role of research	Concentrates on description and explanation. Detached, external observer. Clear distinction between reason and feeling. Aim to discover external reality rather than creating the object of study. Strive to use rational, consistent, verbal logical approach. Seek to maintain clear distinction between facts and value judgements. Distinction between science and experience.	Concentrates on understanding and interpretation. Researchers want to experience what they are studying. Allows feeling and reason to govern action. Partially creates what is studied, meaning of the phenomena. Use of pre-understanding is important. Distinction between facts and value judgements is less clear. Accepts influence from both science and personal experience.
Techniques used by the researchers	Formalises statistical and mathematical methods are predominant.	Primarily non-quantitative.
Source: Carson, Cilmore, Perry, and Gronhaug (2001).		

Furthermore, positivist research provides an empirical test of theory, in order to increase the accuracy of social reality (Neuman, 2007) and to enhance the predictive understanding of facts (Orlikowski & Baroudi, 1991). Moreover, the positivist approach was chosen because this study considered that the quantitative method would be more suitable to examine the relationship between independent and dependent variables, empirically through gathering data by a questionnaire-based survey and then, to analyse the data statistically; which strengthens the interpretations of the findings.

3.3 Research Framework

The theoretical model consists of variables from various theories. The enjoyment of helping others from the social exchange theory, self-efficacy from the social cognitive theory, interpersonal trust from the social capital theory, and the humility virtue from the virtue theory is used to investigate the influence of these non-monetary factors on knowledge sharing behaviour with the moderating effects of religiosity. From the literature review, this study proposed the following framework as shown in Figure 3.1.

This research will focus on and investigate the relationship between the non-monetary factors and knowledge sharing behaviour in the presence of religiosity as a moderating variable. In this research, it is expected that the factors that encourage individuals to share knowledge with colleagues are the enjoyment of helping others, reputation, self-efficacy, interpersonal trust and humility. The humility construct is used in this research as a new independent variable. Moreover, the religiosity variable is also a new variable used as a moderating variable.

In this research, the author suggests one dependent variable that is knowledge sharing behaviour. Knowledge sharing behaviour refers to the degree to which individuals exchange and share knowledge and expertise with other colleagues in the

organisation and uses it in order to create new knowledge. The social exchange theory and cognitive theory were used in this study with its constructs to determine knowledge sharing behaviour. In line with Bartol and Srivastava's (2002) research, non-monetary incentives or intrinsic motivation factors are primarily important in influencing individuals to share knowledge. Such opinion might suggest a significant association between the non-monetary variable and knowledge sharing behaviour.

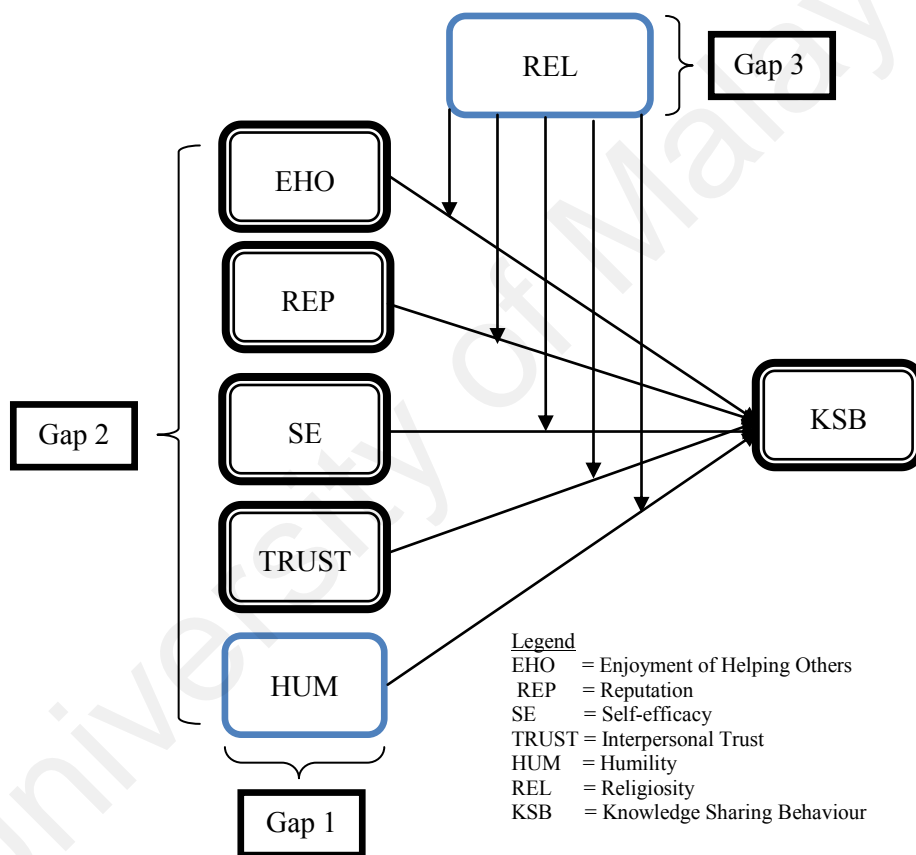


Figure 3.1 Research Framework

3.4 Research Hypotheses Development

This section discusses the hypotheses development and investigates the relationship among the constructs in the suggested framework.

The non-monetary factors refer to the intrinsic incentives that motivate a person to complete certain tasks willingly without expecting tangible rewards in return. Bartol and Srivastava (2002) reported that in the communities of practice, monetary rewards are inefficient in motivating knowledge sharing and that what matters are non-monetary rewards (intrinsic rewards). In addition, Bock and Kim (2002) provided evidence that expected rewards showed a negative sign towards knowledge sharing and discouraged the attitude in employees instead of encouraging it. Therefore, in order to answer question 1: what motivates postgraduate students in terms of non-monetary factors to share knowledge? The main hypothesis is based on examining the relationship between non-monetary factors and knowledge sharing behaviour. Thus, the proposed hypothesis will be:

H1: There is a positive relationship between non-monetary factors and knowledge sharing behaviour.

From the main hypothesis, five sub-hypotheses were developed to test hypothesis 1 according to the number of the non-monetary factors used in this research and is explained in details as follows:

3.4.1 Enjoyment of Helping Others

The first construct in the framework is the enjoyment of helping others as an independent variable, proposed to have an influence on the knowledge sharing behaviour. From a theoretical point of view, the enjoyment of helping others influences the behaviour of individuals when they share knowledge because when individuals are

engaged in solving problems, they contribute to knowledge sharing. They either feel challenged or they enjoy helping others (Kankanhalli et al., 2005; Vuori & Okkonen, 2012; Wasko & Faraj, 2000; Wasko & Faraj, 2005; Wei, Choy, Chew, & Yen, 2012). The enjoyment of helping others is based on the altruism concept, which refers to helping others willingly without expecting something in return. Blau (1964) suggested that the social exchange theory is concerned with intrinsic rewards, which do not need an exact price in return. The returns will be intangible such as the feeling of enjoyment while helping others. One of the popular constructs that is derived from the social exchange theory is the enjoyment of helping others. This construct has been used by many authors (Kankanhalli et al., 2005; Lin, 2007; Wasko & Faraj, 2005). Prior research showed that individuals, who were intrinsically motivated to share knowledge, for example engaging in solving problems, received a feeling of challenge and pleasure, and eventually the enjoyment of helping others (Wasko & Faraj, 2000, 2005). The knowledge sharing behaviour refers to the extent to which individuals can share knowledge and expertise with other colleagues in the organisation and benefit from it in order to create new knowledge and innovative ideas. The enjoyment of helping others has been found to be significant in predicting the individual's knowledge sharing behaviour (Lin, 2007). This study used the social exchange theory represented by the enjoyment of helping others as one independent construct in predicting the behaviour of knowledge sharing among postgraduate students. Hence, the following hypothesis was formulated:

H1a: There is a positive relationship between the enjoyment of helping others and knowledge sharing behaviour.

3.4.2 Reputation

Reputation comes from the theory of social exchange of Blau (as cited in Wasko & Faraj, 2005). According to the theory, individuals participate in social interaction due to the expectation that ends with social rewards such as status, respect and reputation (Wasko & Faraj, 2005). This understanding shows that a person can benefit from sharing his knowledge with others. This perception of sharing would enhance his or her reputation among peers in the network. Wasko and Faraj (2005) explained that maintaining a status or possessing a reputation can be achieved through sharing knowledge and the participant could share his / her knowledge through social interaction. The results of Hsu and Lin (2008) indicate that reputation was a social reward and an intrinsic factor to motivate knowledge sharing participation in blogs. Accordingly, this study hypothesised that:

H1b: There is a positive relationship between reputation and knowledge sharing behaviour.

3.4.3 Self-Efficacy

The third independent variable in the framework is self-efficacy. Self-efficacy refers to an individual's confidence in his or her self-capability and ability to perform a particular task (Lin, 2007). Prior researches highlighted factors that affected individual behaviour for sharing knowledge such as self-efficacy (Hsu et al., 2007; Lin, 2007). It encourages individuals to share knowledge with colleagues (Wasko & Faraj, 2005). Researchers found that individuals with confidence in their ability were likely to provide and share important knowledge to job-related problems (Lin, 2007). Prior researches underlined different factors that affected individual willingness to participate in knowledge sharing such as the organisation's environment, benefits and extrinsic and intrinsic motivations (Bock & Kim, 2002; Bock et al., 2005; Kankanhalli et al., 2005;

Wasko & Faraj, 2005). They found that self-efficacy motivated personal behaviour, and many authors used it to predict knowledge sharing behaviour (Endres et al., 2007; Hsu et al., 2007). Therefore, the second theory used in this research is the social cognitive theory, represented in the self-efficacy construct, as another motivator factor that increases the understanding of the determinant of knowledge sharing behaviour. And accordingly, this study proposed that:

H1c: There is a positive relationship between self-efficacy and knowledge sharing behaviour.

3.4.4 Interpersonal Trust

The fourth independent variable in this study is interpersonal trust. Blau (1964) reported that trust was important in the social exchange process. According to Blau social exchange theory (as cited in Wu et al., 2009), individuals set up an exchange relationship between others willingly. Moreover, Nahapiet and Ghoshal (1998) asserted that when trust was high in a relationship between parties, they engaged gladly in social exchange and increased the motivation to cooperate and communicate. Similarly, Lin (2006a) argued that trust is an essential characteristic of relationships that encourage individuals to interact together and share knowledge. In addition, Wu et al. (2009) noted that the social exchange relationship will be stronger if trust exists among colleagues. Ma, et al. (2008) mentioned that to enhance the social relationship between people, a trusting environment becomes an essential element in increasing their willingness to share knowledge. Many authors believed that trust played an important role in knowledge sharing (Lee et al., 2006a; Wang & Noe, 2010; Zhang & Sundaresan, 2010). When trust exists between individuals, they will share their knowledge willingly (Bakker et al., 2006; Ma et al., 2008). From the definition of interpersonal trust in Chapter One, it is obvious that interpersonal trust refers to the existence of mutual trust

and sincerity in dealing with others, and the honest desire of sharing knowledge. Therefore, trust becomes a key element that promotes knowledge sharing, and determines the nature of the interaction among people. In addition, interpersonal trust and knowledge sharing strengthen each other (Lee et al., 2006a).

From the above discussion, and establishing on previous research, interpersonal trust among individuals is an essential factor that leads to the success of knowledge sharing. However, this study proposed that interpersonal trust will motivate and encourage an individual's behaviour to share knowledge with each other. Therefore, the following hypothesis is developed:

H1d: There is a positive relationship between interpersonal trust and knowledge sharing behaviour.

3.4.5 Humility

The fifth independent variable employed in this study is humility. This construct has been derived from social and psychological science (Tangney, 2000). The Aristotle theory of virtue and moral ethics explained that virtue is a character trait that shows how a person acts and behaves. Moreover, humility has been regarded as a virtue in many religions and cultures (Kupfer, 2003; Morris et al., 2005). Morris et al. (2005) referred to humility as willingness found in a person to see oneself accurately and to put oneself in a position which involves neither self-abasement nor overly positive self-regards. According to Klenke (2005), humility is a spiritual value and virtue that could predict and determine the leadership behaviour. Moreover, (Morris et al., 2005) stated that humility offers an 'other' orientation to leaders rather than 'self' orientation. This 'other' orientation would clearly form the leader behaviour. They added that humility would lead to leadership behaviour. Humility has been studied excessively in the area of socio-psychology as a virtue. Previous studies found that humility positively affected

the organisation's performance (Collins, 2005). In addition, it has been mentioned that humility as an organisational behaviour positively affected the firm's outcome (Vera & Rodriguez-Lopez, 2004). Humility as a virtue has been found in the literature as a strong positive construct that influences relationships (Kupfer, 2003). Humility as a virtue is really helpful instrument to relate human being together; moreover, humility enhances the relationship among people from different cultures (Crigger & Godfrey, 2010). In other words, humility facilitates and strengthens the social relationship between people and makes it easy for them to communicate and share their knowledge with each other. Exline and Geyer (2004) asserted that humility would facilitate the role of cooperating and sharing, especially with close ones such as colleagues, friends and family. Similarly, Crigger and Godfrey (2010) stated that sharing with other colleagues happens during dialogues within specialisation or other disciplines which reflects the core concept of humility. Humility has been viewed as an essential factor that develops a mutual relationship among individuals and communities as well (Tervalon & Murray-Garcia, 1998).

Humility is a new construct in the area of knowledge management, especially in terms of knowledge sharing. Since humility has an influence on relationships in facilitating cooperation and sharing, this study investigated the relationship between humility and knowledge sharing and assumes that humility might influence knowledge sharing among colleagues.

In Chapter four, the results of factor analysis divide humility into two factors. The first factor is labelled as scholar humility which refers to the humility that scholars acquired from their huge knowledge, the more knowledge the scholars have, the more humble they are, while the second factor is labelled as general humility which refers to innate humility that is embedded into the human beings by nature. The two factors of humility will be discussed in detail in Chapter Four. However, humility has not been

applied in determining and predicting knowledge sharing behaviour. In this research, two hypotheses regarding humility are proposed:

H1e1: There is a positive relationship between scholar humility and knowledge sharing behaviour.

H1e2: There is a positive relationship between general humility and knowledge sharing behaviour.

3.4.6 Religiosity

The last construct is religiosity, used to moderate the relationship between non-monetary variable and knowledge sharing behaviour. Delener (1990) referred to religiosity as the extent to which an individual believed in certain religious values and ideas, and practiced regular religious activities. Many authors declared that religiosity had a strong influence on human behaviour (Delener, 1994; Essoo & Dibb, 2004; Mattila et al., 2001; Mokhlis, 2006a; Poulson et al., 1998). Most of the studies found that religiosity positively affected the person's behaviour. The reason being that a person will watch his/her activities, avoid bad behaviour and follow the good teachings of his/her religion or beliefs and avoid committing vices. From the findings of their studies, it is revealed that religious people are very committed to their values and beliefs, which are important elements of their character and constitute their culture. Accordingly, they are encouraged to behave with respect to its norms and teachings. For example, Poulson et al. (1998) found that the strength of religiosity played a vital role in decisions about drinking alcohol and engaging in risky sexual activity. Similarly, Mattila et al. (2001) found that a variation in student religious beliefs (liberal or conservative) is significantly related towards their drinking, drugs and casual sex behaviour. From the findings of prior studies (Mokhlis, 2006a; Mattila et al., Delener, 1994; 2001; Poulson et al., 1998; Esso & Dibb, 2004), it is obvious that religiosity is a

key element in determining people's behaviour. Moreover, the findings of prior studies proved that religiosity moderated a deterrent effect on crime behaviour (Baier & Wright, 2001).

This study would like to investigate the role of religiosity on the relationship between non-monetary rewards and knowledge sharing behaviour. Firstly, it has been established in the literature that the greater the person's religious commitment, the greater the variance in their behaviour. Since religiosity determines human behaviour, this trend guides us to suggest that the religious commitment of a person would influence the base relationship between non-monetary rewards and the knowledge sharing behaviour with others. While non-monetary rewards may or may not have a significant relationship with knowledge sharing, the relationship would be stronger under strong religiosity. In answering question 2, what role does religiosity play in the relationship between non-monetary factors and knowledge sharing behaviour? The following hypothesis was proposed:

H2: Religiosity moderates the relationship between non-monetary factors and knowledge sharing behaviour.

Religiosity has been studied in different religious groups such as Christian Catholics and Jewish household's purchasing behaviours (Delener, 1990); and Muslim, Christian Catholics and Hindu's shopping behaviour (Essoo & Dibb, 2004). Moreover, Ong and Moschis (2006) investigated the effects of religious beliefs and commitments held by consumers in different cultures, as they studied the ethnic and religious groups in Malaysia. Therefore, to answer question 3 of this research how religiosity among ethnic groups moderates the relationship between non-monetary factors and knowledge sharing behaviour? The following main hypothesis was proposed:

H3: Religiosity among different ethnic groups moderates the relationship between non-monetary factors and knowledge sharing behaviour.

Out of this main hypothesis (H3), four Sub hypotheses have been developed to test hypothesis 3 and to represent the interaction between religiosity and the four main ethnicity groups in Malaysia. These hypotheses were:

H3a Religiosity among Malay ethnic group moderates the relationship between non-monetary factors and knowledge sharing behaviour.

H3b Religiosity among Chinese ethnic group moderates the relationship between non-monetary factors and knowledge sharing behaviour.

H3c Religiosity among Indian ethnic group moderates the relationship between non-monetary factors and knowledge sharing behaviour.

H3d Religiosity among 'Others' ethnic group moderates the relationship between non-monetary factors and knowledge sharing behaviour.

In addition, Poulson et al. (1998) found that women with strong religious affiliation consumed less alcohol and engaged less in unsafe sexual behaviour than females with less religiosity. Men with religious conviction were not significantly associated with drinking alcohol and engaging in risky sexual behaviour. This study assessed the effects of religious commitment of the four ethnic groups in Malaysia (Malays, Chinese, Indians and Others), as well as the gender groups (male and female) among postgraduate students in public universities in Malaysia, on the relationship between non-monetary motivation factors and knowledge sharing behaviour. Question 4 is to what extent does religiosity among different gender groups moderate the relationship between non-monetary factors and knowledge sharing behaviour? In answering this question, the following hypothesis was proposed:

H4: Religiosity between different gender groups moderates the relationship between non-monetary factors and knowledge sharing behaviour.

In order to test hypothesis 4, two sub hypotheses have been built up to reflect the interaction of the gender 'male and female' on the relationship between non-monetary factors and knowledge sharing behaviour. The two sub hypotheses were:

H4a Religiosity between male gender groups moderates the relationship between non-monetary factors and knowledge sharing behaviour.

H4b Religiosity between female gender groups moderates the relationship between non-monetary factors and knowledge sharing behaviour.

Postgraduate students in public Malaysian universities are not only from Malaysia, as part of them comes from different countries around the world. Therefore, this study investigated which postgraduate students share their knowledge more in terms of their countries. In other words, who shares their knowledge more Malaysian students or International students? Therefore, to answer question 5, how does knowledge sharing behaviour differ between Malaysian and International students? The final hypothesis proposed:

H5: There is a difference between Malaysian and international postgraduate students in terms of knowledge sharing. Finally, Table 3.2 summarises all the research hypotheses of this study.

Table 3.2 : Summaries of Research Hypotheses

H1	There is a positive relationship between non-monetary factors and knowledge sharing behaviour.
H1a	There is a positive relationship between the enjoyment of helping others and knowledge sharing behaviour.
H1b	There is a positive relationship between reputation and knowledge sharing behaviour.
H1c	There is a positive relationship between self-efficacy and knowledge sharing behaviour.
H1d	There is a positive relationship between interpersonal trust and knowledge sharing behaviour.
H1e1	There is a positive relationship between scholar humility and knowledge sharing behaviour.
H1e2	There is a positive relationship between general humility and knowledge sharing behaviour.
H2	Religiosity moderates the relationship between non-monetary factors and knowledge sharing behaviour.
H3	Religiosity among different ethnic groups moderates the relationship between non-monetary factors and knowledge sharing behaviour.
H3a	Religiosity among Malay ethnic group moderates the relationship between non-monetary factors and knowledge sharing behaviour.
H3b	Religiosity among Chinese ethnic group moderates the relationship between non-monetary factors and knowledge sharing behaviour.
H3c	Religiosity among Indian ethnic group moderates the relationship between non-monetary factors and knowledge sharing behaviour.
H3d	Religiosity among 'Others' ethnic group moderates the relationship between non-monetary factors and knowledge sharing behaviour.
H4	Religiosity between different gender groups moderates the relationship between non-monetary factors and knowledge sharing behaviour.
H4a	Religiosity between male gender groups moderates the relationship between non-monetary factors and knowledge sharing behaviour.
H4b	Religiosity between female gender groups moderates the relationship between non-monetary factors and knowledge sharing behaviour.
H5	There is a difference between Malaysian and international postgraduate students in terms of knowledge sharing.

3.5 Research Methods

The suitable research method for this study is a quantitative method, where self-administrative questionnaires were distributed to collect the primary data from the target population. The returned questionnaires from participants were screened and statistically analysed to find out the relationship between non-monetary factors and knowledge sharing behaviour. The non-monetary factors are: enjoyment of helping others, reputation, self-efficacy, interpersonal trust, and humility, whereas in this study

religiosity was used as a moderating variable on the relationship between non-monetary factors and knowledge sharing behaviour. The examined constructs were measured by a 5 point likert scale. Besides the measurement items that were operationalised, the constructs used in the research model were adopted from prior similar studies in the field of knowledge sharing and amended to fit the present study.

3.6 Research Instrument Development

This part of the study discusses the conceptual definitions of the variables that have been used in the framework and focus on their operational definitions. As mentioned earlier, the definition of the variables in this research have been combined from various definitions of the same constructs in prior researches. The main variables that have been shown in this research model are knowledge sharing behaviour as a dependent variable, the enjoyment of helping others, self-efficacy, interpersonal trust and humility as independent variables, and religiosity as a moderating variable. These variables have been chosen to develop the model of this research for the reason that, previous literature in the area of social behaviour particularly in knowledge sharing identified these variables as predictors of individual behaviour. So, they were selected to predict knowledge sharing behaviour of postgraduate students in Malaysian public universities. Whereas, the items that are used in measuring these variables are chosen from previous studies that proved its validity and reliability. Moreover, the items used in this study in measuring the variables in the research model are generated from past researches and amended to suit this study. All the constructs have been validated and used in other researches in knowledge management, management information systems, information systems, and consumer and organisational behaviour. The humility construct is new in the area of knowledge sharing. Therefore, this study pointed out the influence of humility on the knowledge sharing behaviour of individuals.

3.7 Research Constructs Operational Definitions

This part of the thesis defines the constructs of the framework. Many definitions were found in the literature for the same constructs. This study chooses the suitable and appropriate definitions to suit the study context, and specifies the items for each construct to clarify the operational definition.

3.7.1 Knowledge Sharing Behaviour Scale Items

The variable has been used as a dependent variable by several authors (Bock et al., 2005; Hsu et al., 2007; Lee, 2001; Lin & Lee, 2004). The conceptual definition of knowledge sharing behaviour in this research refers to the degree to which individuals share knowledge and expertise with other colleagues in the organisation and use it in order to create new knowledge. Many researches (Bock et al., 2005; Lin, 2007; Lee, 2001; Lin & Lee, 2004) provided an operational definition to this construct. In this study, the operational definition of knowledge sharing behaviour is established based upon validated items from prior studies in the literature to ensure content validity. The internal reliability in Lee (2001) for explicit knowledge sharing was 0.901 and 0.758 for explicit knowledge sharing. The reliability in Bock et al. (2005) reported for intention to share knowledge was 0.930, whereas, the reliability in Lin (2007) reported 0.78 for knowledge donation and 0.80 for knowledge collection. The reliability in the three studies exceeded the 0.70 that was suggested by (Hair, Black, Babin, Anderson, & Tatham, 2006). In this research the items selected mainly from Bock et al. (2005), Lee (2001), Lee, et al. (2008), and Lin and Lee (2004). Bock et al. (2005) investigated individual intention to share explicit and implicit knowledge and the items generated from them were modified to reflect the knowledge sharing behaviour and to suit the context of the study. These items are validated in the context of organisation information systems and behaviour of managers in the organisation. The items measure

how the respondents usually share their knowledge with each other. The items of the construct are shown in Table 3.3.

Table 3.3 : Knowledge Sharing Behaviour Scale Items

	Items Statement	Source
1	My colleagues and I share ideas, findings, and proposals with each other.	Lee (2001); Bock et al. (2005); Lin (2007)
2	My colleagues and I share articles, books, models, and methodologies with each other.	Lee (2001); Bock et al. (2005)
3	My colleagues and I share academic knowledge regarding our specialisation obtained from studies with each other.	Lee (2001); Lin and Lee (2004)
4	My colleagues and I share analysis skills and experience obtained from education and training with each other.	Lin and Lee (2004); Bock et al. (2005); Lee (2007)
5	My colleagues and I share success and failure stories.	Lee et al. (2008)

3.7.2 Enjoyment of Helping Others Scale Items

The enjoyment in helping others refers to the perception of pleasure obtained from helping others through sharing knowledge among colleagues in the organisation. This study derived the scale for measuring the enjoyment of helping others from Kankanhalli et al. (2005), and Lin (2007). The composite reliability reported by (Kankanhalli et al., 2005; Lin, 2007) for the first four items that measured this construct were 0.84 and 0.96 respectively. The reliability exceeded .70 which showed that the measuring scales were valid. Item Five was taken from the measuring scale of Wasko and Faraj (2005). The reliability value for the measuring scale of the enjoyment of helping others construct was .96. The five items altogether measured the respondents' views about the degree of pleasure that they believe they obtained from sharing knowledge, using a 5 point Likert scale rating, from strongly disagree to strongly agree, for the responses recorded. The measuring items for the enjoyment of helping others construct are shown below in Table 3.4.

Table 3.4 : Enjoyment in Helping Others Scale Items

	Items Statement	Source
1	I enjoy sharing my knowledge with colleagues.	Lin, 2007; Kankanhalli et al. (2005)
2	I enjoy helping colleagues by sharing my knowledge.	Lin, 2007; Kankanhalli et al. (2005)
3	I feel good to help someone else by sharing my knowledge.	Lin, 2007; Kankanhalli et al. (2005)
4	Sharing my knowledge with colleagues is pleasurable.	Lin, 2007; Kankanhalli et al. (2005)
5	I like helping others by sharing my knowledge	Wasko and Faraj (2005)

3.7.3 Reputation Scale Items

The items that measure the reputation construct were derived from the measuring scale of Kankanhalli et al. (2005) and Wasko and Faraj (2005) as shown in Table 3.5. The first three items were adapted from the measuring scale of reputation of Wasko and Faraj (2005) and the composite scale reliability exceeded .70, which meets the recommended value, indicating that the measuring scale items was valid. The other three items were adapted from the measuring scale items of Kankanhalli et al. (2005) and the reliability was assessed by Cronbach's alpha which was .89, indicating adequate reliability values. The six scale items of measuring reputation will be used to measure the respondent's perception about to what extent they believed that participating in knowledge sharing enhanced their reputation. Each item in the scale was evaluated on a 5 point Likert scale rating; from strongly disagree to strongly agree.

Table 3.5 : Reputation Scale Items

	Items Statement	Source
1	I earn respect from others by contributing in knowledge sharing.	Wasko and Faraj (2005)
2	Participating in knowledge sharing activity would enhance my personal reputation among colleagues.	Wasko and Faraj (2005)
3	Contribution in knowledge sharing would improve my status among colleagues.	Wasko and Faraj (2005)
4	Participating in knowledge sharing activity would enhance my personal reputation among colleagues.	Kankanhalli et al. (2005)
5	Participating in knowledge sharing activity would enhance my personal reputation among colleagues.	Kankanhalli et al. (2005)
6	Sharing my knowledge with colleagues gives me more prestige.	Kankanhalli et al. (2005)

3.7.4 Self-Efficacy Scale Items

In this research, self-efficacy refers to an individual's belief in his or her capability to perform a specific task. The items used to operationalise self-efficacy were mainly derived from previous studies and adjusted to suit the current study as shown in Table 3.6.

Four items were adapted from Hsu et al.'s (2007) study; another four items were taken from Kuo and Young (2008) study while another two items were derived from the study of Lin (2007).

All of the three studies were conducted in the context of knowledge sharing. The reliability for the self-efficacy construct assessed by Cronbach's alpha was 0.93 in the study of Hsu et al. (2007) and 0.86 in the study of Lin (2007), whereas the composite reliability was 0.88 in the study of Kuo and Young (2008). The ten items were used to assess the individual's judgement of their capability to share valuable knowledge with colleagues. The measurement scale items were demonstrated in Table 3.6.

	Items Statement	Source
1	I am confident that I can share my knowledge through conversation with my colleagues.	Hsu et al. (2007)
2	I am confident that I can provide new insights, ideas, and issues in discussion with my colleagues.	Hsu et al. (2007)
3	I am confident that I can comment on a specific issue on my study field.	Kuo and Young (2008)
4	I am confident that I can discuss study-related issues with my colleagues in seminars.	Kuo and Young (2008)
5	I am confident that I can share articles that I found, useful web sites, and other related sources with my colleagues.	Kuo and Young (2008)
6	I am confident that I can talk on a specific topic with my colleagues.	Kuo and Young (2008)
7	I am confident that I can share my knowledge by answering questions, giving advice or providing examples.	Hsu et al. (2007)
8	I am confident that I can share my knowledge by explaining myself verbally or in writing.	Hsu et al. (2007)
9	I am confident in my ability to provide knowledge that my colleagues consider valuable.	Lin (2007)
10	I have the experience required to share valuable knowledge with my colleagues.	Lin (2007)
6	I am confident that I can talk on a specific topic with my colleagues.	Kuo and Young (2008)

3.7.5 Interpersonal Trust Scale Items

Interpersonal trust refers to individuals maintaining reciprocal faith and good intention in each other while sharing knowledge willingly among them. The interpersonal trust items statement is based on beliefs and willingness in sharing

trustfulness, credulity, and consideration among colleagues. Table 3.7 demonstrates the items.

The items reflect the conceptual definition of the construct which is collected from previous proven studies and modified to suit our study. The items' measure was adapted from Kankanhalli et al. (2000), Lee and Choi (2003a), Lin (2006a), and Pai (2006) and the reliabilities reported by these authors were 0.87, 0.89, 0.81 and 0.85 respectively.

Table 3.7 : Interpersonal Trust Scale Items

	Items Statement	Source
1	My colleagues are generally trust worthy.	Lin (2006a); Lee and Choi (2003)
2	My colleagues and I have mutual faith in our intentions and behaviour.	Lee and Choi (2003)
3	My colleagues and I have mutual faith in the knowledge sharing ability of each other.	Lin (2006a)
4	My colleagues and I have a mutual faith-based relationship.	Lin (2006a)
5	My colleagues and I are not reluctant to share our knowledge and experience.	Pai (2006)
6	My colleagues and I believe in using each other's knowledge appropriately.	Kankanhalli et al. (2005)
7	My colleagues and I share the best knowledge that we have.	Kankanhalli et al. (2005)

3.7.6 Humility Scale Items

In this research, humility is defined as a personal orientation found on a willingness to see the self accurately and a propensity to put oneself in perspective and it involves neither self-abasement nor overly positive self-regards. It consists of the following three dimensions. The first dimension is self-awareness, referring to the capability to evaluate one's strengths and weaknesses. The second dimension is openness, which is accepting new ideas, ways of thinking and the pattern of understanding. The third dimension is the transcendence which concerns the acceptance of the perception that there is something greater than the person himself, the appreciation of others, positive thinking and such activities.

To measure the humility construct, the items derived from PhD researches (Estephan, 2005; Kilroy, 2009; Rowden, 2009) are reviewed and amended to measure the ability to evaluate one's strengths and weaknesses, the openness in accepting advices, recognition of new opinions, appreciative output of others, overcome the self-ego, and utilise forgiveness with others. All the items are assessed on a five point Likert scale rating; from strongly disagree to strongly agree. The reliability value in the studies of Estephan (2005), and Kilroy (2009) were 0.96 and 0.91 respectively, whereas Rowden used the Delphi method in his study. Table 3.8 shows the humility scale items.

Table 3.8 : Humility Scale Items

	Items Statement	Source
1	A humble person puts his colleague's needs above his own personal needs.	Estephan (2005)
2	A humble person is careful not to offend his/her colleagues when arguing with them.	Estephan (2005)
3	A humble person is careful not to say anything that might hurt his colleague's feelings.	Estephan (2005)
4	A humble person is more ready to accept responsibility.	Rowden (2009)
5	A humble person is more ready to apologise.	Rowden (2009)
6	A humble person openly admits his/her weaknesses.	Kilroy (2009)
7	A humble person admits when he/she does not know something.	Kilroy (2009)
8	A humble person's behaviour means that he/she does not know everything.	Kilroy (2009)
9	A humble person gives more credit to colleagues for their good ideas and opinions.	Rowden (2009)
10	A humble person is less likely to dismiss the opinion and input of others.	Rowden (2009)
11	A humble person is more likely to evaluate the opinion and input of others.	Rowden (2009)
12	A humble person is more willing to overcome 'ego concerns'.	Rowden (2009)
13	A humble person asks colleagues for forgiveness when realising that he/she is at fault.	Estephan (2005)

3.7.7 Religiosity Scale Items

Religiosity in this study refers to the degree to which beliefs in specific religious values and ideas are held and practiced by an individual, regardless of the participant's religion affiliation. The measuring scale of religiosity used in this study was derived from the measuring scale items of Worthington et al. (2003). Worthington used two

samples, the Cronbach's alpha for the first sample was .95 and for the second sample was .98, which exceeded the recommended value of .70. Table 3.9 displays religiosity items.

Table 3.9: Religiosity Scale Items

	Items Statement	Source
1	Religion is especially important to me because it answers many questions about the meaning of life.	Worthington et al. (2003)
2	I often read books and magazines about my religion.	Worthington et al. (2003)
3	I spend time trying to grow the understanding of my faith.	Worthington et al. (2003)
4	My religious beliefs lie behind my whole approach to life.	Worthington et al. (2003)
5	I make financial contributions to my religious organisation.	Worthington et al. (2003)
6	I enjoy spending time with others of my religious affiliation.	Worthington et al. (2003)
7	Religious beliefs influence all my dealings in life.	Worthington et al. (2003)
8	It is important to me to spend time in private religious thoughts and prayer.	Worthington et al. (2003)
9	I enjoy taking part in activities of my religious organisation.	Worthington et al. (2003)
10	I keep well informed about my local religious group and have some influence in its decision.	Worthington et al. (2003)
11	I perceive my religiosity as strong.	Worthington et al. (2003)

3.8 Sampling Design

In this part of the research, the target population was determined and the sample size, as well as the sampling frame was discussed. Finally, the sampling technique was illustrated.

Sampling can be explained as the procedures followed in selecting a particular number of elements as a sufficient sample from the target populations, in order to generalise the sample characteristics to the whole elements in the population (Cavana, Delhaye, & Sekaran, 2009). The notion in collecting the data from a sample and not from the whole population is the ability to investigate several hundreds of elements or even thousands, which is practically applicable but not viable to examine each and every element of the population, in terms of time and cost (Cavana, 2001). Zikmund (2000) noted that the sample should represent a subset element from the entire population to draw conclusions on the whole population. Cooper and Schindler (2003) stated that there must be enough sample in a way that it would not underestimate or

overestimate the population so as to avoid bias in the represented sample. The sample of this study is the postgraduate students, which will be selected from the total postgraduate students registered in public universities in the Klang Valley.

3.8.1 Target Population

In order to select the sample, it is important to identify the target population. Zikmund (2000) defined target population as “the specific complete group relevant to the research project”. In other words, it is the total elements that the sample will be taken from and considered as the main source of the data collection. Johnston and O’Malley (1980) reported that the selection of the sample must be scientific in order to be highly representative of the entire population. Taking into account that the characteristics and specifications of the sample should be common within the target population (Zikmund, 2000), this study ensured that the sample used was consistent in its characteristics and specifications within the target population.

In this research, the target population consisted of all the postgraduate students in Malaysian public universities in the Klang valley, including international postgraduate students. The integration of local and international postgraduate students might provide a generalisation regarding knowledge sharing behaviour of the postgraduate students in Malaysian public universities.

From a methodological point of view, the reason of focusing on students as respondents refers to many justifications. For example, the cost per respondent is very low, which allows the collection of the needed data from a large number of respondents (Johnston & O’Malley, 1985). In addition, the non-response rate is expected to be low due to the greater degree of anonymity, where the name, address and phone numbers of the respondents are undeclared, as compared to other survey methods such as household or telephone surveys (Johnston & O’Malley, 1985). Moreover, Johnston and Malley

(1985) asserted that the student survey enabled the use of self-administrative questionnaires.

The Klang Valley is an area in the Selangor state of Malaysia. It is often assumed to comprise Kuala Lumpur and its suburbs and adjoining towns and cities (“Klang Valley,” 2010). It was selected for the purpose of collecting data for the reason that most of the public universities that have postgraduate students (Malaysian Ministry of higher Education [MMHE], 2008) were located here. Table 3.10 shows the number of registered students in each university selected for the study sample.

The total population in these public universities was 33,657 students (MMHE, 2008, p. 20). Table 3.10 shows the six public universities based in Klang Valley and the number of enrolled postgraduate students.

Table 3.10 : Public Universities and Registered Postgraduate Students

Universities	Students Number
University of Malaya (UM)	8768
Putra University, Malaysia (UPM)	7472
National University of Malaysia (UKM)	5642
University Technology Malaysia (UTM)	5339
MARA University of Technology (UITM)	3754
International Islamic University Malaysia (UIAM)	2682
Total	33657

3.8.2 Sampling Technique (Quota)

Quota sampling was used when there were a various number of relevant characteristics which explain the population such as ethnicity, gender and religious affiliation (Cooper & Schindler, 2003). Quota sampling was used in this research to improve the representativeness of the elements in the population and to ensure adequate elements from minority categories in the population.

The main control dimensions of the population in this study are ethnicity, gender and place of origin. The population will be classified according to related

characteristics, then a desired proportion of the sample from each class is determined to ensure the representation of all classes of the population in the sample and the subjects are selected non-randomly.

3.8.3 Sampling Frame

Cooper and Schindler (2003) asserted that the sampling frame relates closely to the population and represents the element list from which the sample is exactly drawn. Therefore, the sample frame of this study is the listed and registered postgraduate students in the six public universities mentioned in Table 3.10.

3.8.4 Sample Size

The population of the study has been confirmed, as mentioned in Table 3.10, to be equal to 33,657 (MMHE, 2008). Some general guidelines have been proposed to determine the sample size. Pallant (2007) mentioned that the general recommendation for sample size is the larger the better. According to Cavana et al. (2001), samples larger than 30 respondents are appropriate for most researches. If the samples are to be divided to sub-groups such as male/female, a sample size of 30 for each group is necessary. For multiple regressions, the sample size preferably is 10 times or more of the number of the variables used in the study (Cavana et al., 2001). Zikmund (2000) noted that the more the sample size, the more accurate and precise the research results. In addition, Cooper and Schindler (2003) asserted that large samples are able to represent small groups in the population. In this research, 5% out of the target population of 33,657, which is 1683, have been taken as a sample size in order to cover the smallest categories of Indians, other ethnicity and international respondents. For example, MARA University of Technology (UITM) was established as a home for Bumiputera “Malaysian Malay ethnic students” (“Bumiputera,” 2012). So it was difficult to find other Malaysian ethnic students such as Chinese and Indians with a small sample size. Another example, in

International Islamic University Malaysia (UIAM), Chinese and Indian ethnic students are very rare.

The sample size taken from the six public universities is according to the percentage of postgraduate students represented in each university. Table 3.11 shows the number of postgraduate students and their percentage in each university. In respect of the ethnicity of the target population, this study based the percentage that was used to determine the number of the ethnic groups in the sample, on the Ninth Malaysia Plan 2006-2010 (Department, 2006). According to the mentioned plan, the population size in 2000-2010 is as follows: Bumiputera 67.0%, Chinese 24.3%, Indian 7.4% and others 1.3% (Department, 2006, p. 238). Table 3.11 shows the ethnicity percentage of the local postgraduate students in public universities. The representative percentage used in this study regarding the population, in terms of gender, is taken from MMHE (2008). According to MMHE (2008), the percentage of gender in postgraduate students is 51% male and 49% female. To investigate the knowledge sharing among postgraduate students in terms of country of origin, the respondents will be divided into two groups in each study, according to their country of origin - both local and international. Unfortunately, the exact number of international postgraduate students was not found by the research, so an approximate percentage was taken to represent the international students in order to be appropriate for the analysis. Table 3.11 shows the sample design of this study.

Table 3.11 : Sample Design

	UM	UPM	UKM	UTM	UITM	UIAM	Total
Total Population	8768	7472	5642	5339	3754	2682	33657
Respondents % in each university	26%	22%	16%	16%	11%	9%	100%
Sample size 5%	438	370	269	269	185	152	1683
International 25%	110	93	67	67	46	38	421
Local 75%	328	278	202	202	139	113	1262
Malay 67%	220	186	135	135	93	76	845
Chinese 24.3%	80	68	49	49	34	27	307
Indian 7%	23	19	14	14	10	8	88
Others 1.3%	4	4	3	3	2	1	17
Male 51%	223	188	137	137	94	77	857
Female 49%	215	181	132	132	91	75	826

3.9 Questionnaire Structure

The questionnaire instruments were developed by adapting it from prior research which have been proven empirically and adjusted in order to comply with the research context. The questionnaire was divided into four parts. The first part showed the questions of the non-monetary factors, to examine their effects on the postgraduate students' knowledge sharing behaviour. The second part consisted of questions regarding religiosity which is used as a moderating variable to investigate whether religiosity has a moderating effect in the relationship between non-monetary variables and knowledge sharing behaviour. The third part contained the questions that measured the dependent variable (knowledge sharing behaviour). Finally, the fourth part was about the demographic characteristics of the respondents. The fourth part was divided into six questions on gender, age, country of origin, race religion and education. The scale for part 1, 2, and 3 was measured by a five point Likert scale, ranging from

strongly disagrees to strongly agree. The following Table 3.12 shows the parts, constructs and the items in the questionnaire.

Table 3.12 : The Parts, Constructs and Items of the Questionnaire

Part	Constructs	No of Items	Total Items
1	Non-monetary Variables	5	42
	-Enjoyment of Helping Others	6	
	- Reputation	10	
	-Self-efficacy	7	
	-Personal Trust	7	
	-Humility	13	
2	Moderating Variable: Religiosity	11	11
3	Dependent Variable: Knowledge Sharing Behaviour	5	5
4	Demographic Characteristics	6	6
Total of Items			64

3.10 Validation

Validity is the evaluating test used to examine the goodness of the research measuring instruments and these instruments should be accurate enough to measure what the study really intends to measure and nothing else (Cavana et al., 2009; Zikmund, 2000).

3.10.1 Face Validity

Face validity or content validity refers to the same thing (Zikmund 2000). Face validity indicates the subjective judgment among experts that the measurement items reflect precisely the construct which is designed to be measured and the content of the measures represents the scale (Zikmund, 2000). Whereas Cavana et al. (2009) differentiates between them and says face validity should be conducted among a few respondents to find out whether the wording of the items are easy to understand and are clear without any ambiguity, while content validity is related to the adequacy of questionnaire items and whether they represent and tap the construct. According to him,

the content validity must be done by experts to judge the validity of the measuring instruments.

To ensure the consistency between the questionnaire instruments and the literature, content validity was carried out. In order to achieve content validity, the questionnaire items were assessed by four academic experts in the area of management and psychology to evaluate how well the measuring scale presented the measures and whether it reflected the whole concept that was intended to be measured and given comments. Their comments and feedback were carefully considered and some modifications were made to the questionnaire items to remove the ambiguous words and statements and clarify the questions asked.

In this study to test the face validity, the questionnaires were distributed to 50 postgraduate students to examine their reactions to the items and to see whether the questions were clear and understandable. Few adjustments were made and some words were changed with other simpler words to ease understanding and consistency in the interpretation.

3.11 Pilot Study

The pilot study was conducted to ensure that the respondents understand clearly the questions asked and to ensure the validity and the reliability of the whole scale. All the measurement items were adopted from prior research and some amendments were made to it to be consistent with the purpose of this research. According to Cavana et al. (2009), the questionnaire should be distributed to a few respondents from the targeted population to be piloted. Moreover, the pilot study collects from a few of the ultimate respondents rather than from knowledgeable experts to be used before the actual survey study (Zikmund, 2000). The pilot study of this research was carried out among 200 respondents conveniently selected from the target population to examine its validity and reliability. The questionnaire was distributed to the respondents and they were asked to

complete the questionnaire. After screening, out of the returned questionnaires, 160 were used with no missing data. The pilot study showed that there were no serious problems and few changes were made in the wording of the measurement items based on some comments given by the respondents. In addition, the pilot study results showed that the instrument items had face validity.

3.12 Reliability Test

The reliability of the measure instruments refer to the consistency and the stability of the measurements, and the goodness of the measures (Cavana et al., 2009). In other words, the reliability test assesses the consistency between the measuring scale over time (Hair et al., 2006) and maintains the stability of the measurement across time, despite the respondents state or unstable testing conditions (Cavana et al., 2009).

The most common measure of reliability is the internal consistency which assesses the consistency among the items of the scale, and they should measure the same construct. In addition, the inter-correlation among the items must be high (Hair et al., 2006).

In this research, to test the reliability of the pilot survey, the reliability coefficient is employed to assess the internal consistency of the scale with Cronbach's alpha measure. The coefficient alpha varies from 0 to 1 (Malhotra, 2007). The lower limit of the coefficient (Cronbach's alpha) is .70 and it might decrease to .60 in exploratory research; the higher the value of Cronbach's alpha coefficient, the more consistent is the scale (Hair et al., 2006). The reliability value below .60 is generally agreed to be unacceptable (Hair et al., 2006; Malhotra, 2007). The Cronbach's alpha coefficient values of the pilot study results showed that all the non-monetary constructs and religiosity were more than .80 and the dependent variable knowledge sharing behaviour was .885, which indicated that the measuring instruments was appropriate

with high reliability values. The reliability test in this research was conducted first for the pilot study and secondly, for the final data collected. The following Table 3.13 shows the results of the reliability test for the pilot study.

Table 3.13 : Pilot Survey Cronbach's Alpha

Survey Instrument Reliability	
Construct	Cronbach's Alpha
Enjoyment of helping others	0.91
Reputation	0.878
Self-efficacy	0.897
Interpersonal trust	0.88
Humility	0.859
Religiosity	0.932
Knowledge sharing behaviour	0.885

3.13 Data Collection

The next step after developing the research questionnaire was to collect the data using quantitative approach. Moreover, in order to induce the respondents to answer all the questions, the questionnaire was designed nicely with an attractive colour cover, simple and short sentences, not more than four pages in length, and took ten to twenty minutes to complete.

The questionnaires were distributed through a field survey to reach the ultimate respondents. The questionnaire was self-administrated and distributed personally to the respondents in order to have a good response rate. The time duration spent to collect the data was from 25th July 2010 to 25th November 2010. The first plan implemented to collect the data was approaching each respondent personally in their gathering places such as cafeterias, yards, and libraries. This plan was not good enough because it consumed too much time and money, as it entailed several visits. Moreover, every respondent had to be convinced to fill up the questionnaire, which was not applicable. The result, after four weeks, was only a few completed questionnaires. Furthermore, some of the respondents refused totally to participate in filling up the questionnaires.

Some of the respondents promised to take the questionnaire home and return it later after two or three days because they were busy and did not have time. These respondents disappeared and were never seen again, neither them nor the questionnaires. This was the first time during the research that a survey study was conducted and many problems have been faced in collecting the data. Therefore, the first strategy of distributing the questionnaire was cancelled and a new strategy was initiated. The new strategy was to approach the professors and lecturers in their offices before they started their classes and request their permission for distributing the questionnaires among their postgraduate students. What is important here is to mention that none of them rejected the request or reluctantly accepted it. They were very helpful and cooperative, and ready to lend a hand to help in completing the distribution task. As a result of the new strategy, the majority of the respondents sincerely filled up the questionnaires and returned them. This is the reason behind the high percentage of response rate in this research. Only a few of them returned the questionnaire book without answering a single question. In order to overcome the bias in collecting the data, the questionnaires were distributed according to the quota allocated to each segment of the population sample. For instance, when the questionnaires given to the Chinese respondents had reached its particular limit, consequently, a decision was taken to stop giving more questionnaires to this ethnic group and started distributing to the next one.

3.14 Response Rate

To examine the framework empirically and investigate the proposed hypotheses, the initial sample size was 1,683 respondents. The questionnaires were distributed to 1,683 respondents and 1,277 were returned with 76% response rate. Usable questionnaires were 1,267, 90% after eliminating 10 uncompleted questionnaires.

3.15 Data Analysis

Data analysis is a process of interpreting the data collected, simplifying and summarising the details that were revealed in the survey (Coakes & Steed, 2007). After collecting the data, it should be analysed by the appropriate statistical package to find out whether the questions of the research have been supported (Cavana et al., 2009). The data was collected and entered into the computer to be analysed by the statistical package for the social science (SPSS) version 20. At first, 1267 completed questionnaires were used, and preliminary analysis was conducted to screen the data to point out errors in data entry using descriptive command, no error in data entry was detected. Then by running the descriptive analysis, it yielded the characteristics of the respondents such as gender, age, ethnicity, etc. while the frequency analysis showed an overview of the data. Then reliability was conducted in order to find the internal consistency of the items in the measures. This was followed by ANOVA to reduce the items that were not significant before running the factor analysis. To validate the factors, the exploratory factor analysis was used with factor loading more than .60 and the results could be easily used for further multivariate techniques (multiple regressions). The following step was to run multiple regressions to test the research hypotheses. Finally, to examine the moderating effect of religiosity in the relationship between non-monetary factors and knowledge sharing behaviour, an interaction technique was used.

3.16 Conclusion

In conclusion, the third chapter of the methodology demonstrates the conceptual framework and the research hypotheses. In addition, it illustrates in detail the methodology of sampling design, instrument development of the questionnaires and

data collection procedures. The validation, pilot study results and reliability were also explained. Finally, the data analysis techniques were pointed out.

University of Malaya

CHAPTER FOUR

ANALYSIS AND RESULTS

4.1 Introduction

In this chapter, the study employed the statistical package for social science (SPSS) version 20 to analyse the data collected and then, explain the results yielded from the data analysis. Firstly, the demographic characteristics of the respondents of this research were described by using descriptive analysis (gender, age, country of origin, ethnicity, religion and education). Secondly, the ANOVA technique was used to alienate the non-significant items from the measuring scale and the significant items were remained to be used in further analysis. Thirdly, this study examined the reliability of the final data collected from the respondents. Fourthly, an exploratory factor analysis was performed to reduce the items of the non-monetary factors (enjoyment of helping others, reputation, self-efficacy, interpersonal trust, humility), the moderating variable items (religiosity) and the items of the dependent variable (knowledge sharing behaviour), and to provide more convenient and manageable constructs. Fifthly, the factor analysis was conducted to reduce the items in the measure scale. Sixthly, multiple regression was used to find out the relationship between the independent variable (non-monetary factors) and the dependent variable (knowledge sharing behaviour). Seventhly, the interaction technique was used to find the influence of the moderating relationship of religiosity on the relationship between the non-monetary variable and knowledge sharing behaviour. Eighthly, the *t*-test technique was applied to compare the Malaysian postgraduate students with international postgraduate students, in terms of sharing knowledge.

4.2 Demographic Analysis

The following discussion addresses the analysis of the characteristics of the respondents who participated in this research. The descriptive analysis was used to shed light on the profile information of the respondents, which was divided to six categories includes gender, age, and country of origin, ethnicity, religion and education. The demographic analysis was based on the actual true number of questionnaires obtained – 1,267.

4.2.1 Gender

Although this study aimed for 51% male and 49% female respondents, the actual results of the descriptive analysis showed there were slightly more female respondents, about 693, which is approximately 55% compared with male respondents totaling 574 and a percentage of 45%. The reason behind the difference in the actual percentage is because the returned rate was not 100%. Respondent's demographic profile related to genders is shown in Figure 4.1.

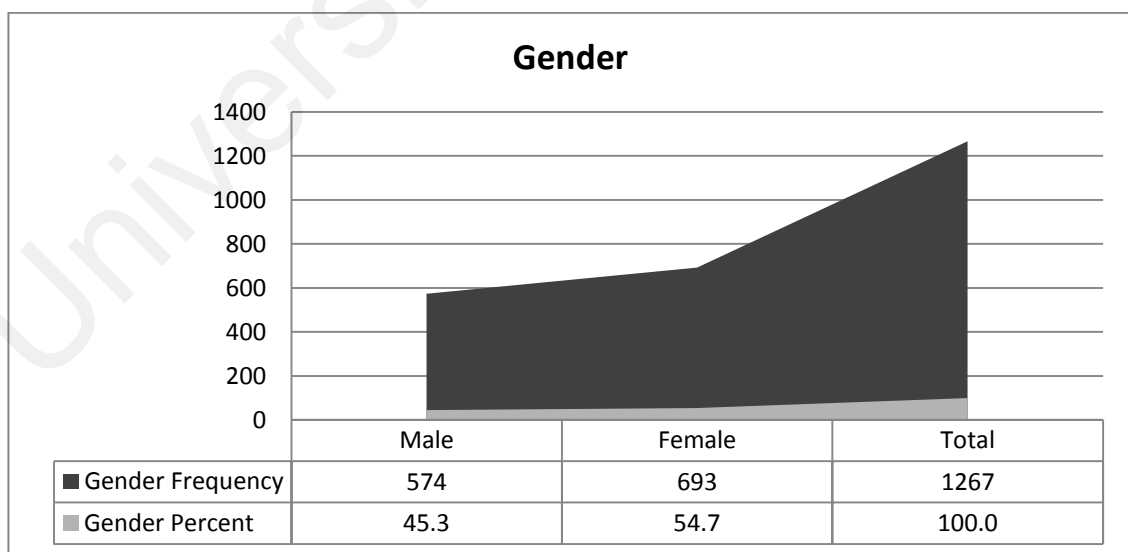


Figure 4.1 Respondent's Demographic Profile by Gender

4.2.2 Age

The descriptive analysis result showed that the demographic profile related to respondent's age varied between 20 to 51 years old and above. The majority of the respondents fell in the range of 20 to 30 years (65%), followed by the age group of 31 to 40 (29%), the age group between the range of 41 to 50 (5%) and the last age group of above 51 (0.8%). Figure 4.2 demonstrates the demographic profile of the respondent's age.

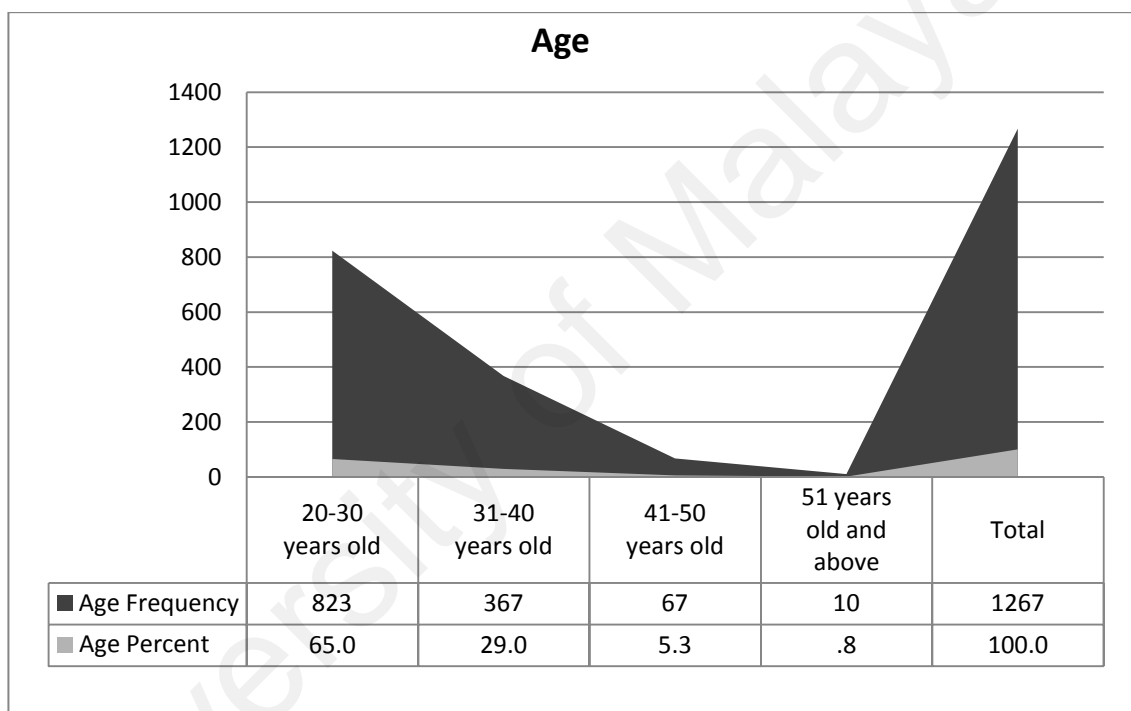


Figure 4.2 Respondent's Demographic Profile by Age Group

4.2.3 Country of Origin

The categories of the country of origin show that most of the respondents were Malaysians with 877 people (69.2%) while 390 respondents were from other countries (30.8%). Figure 4.3 shows the demographic profile of the respondents by country of origin.

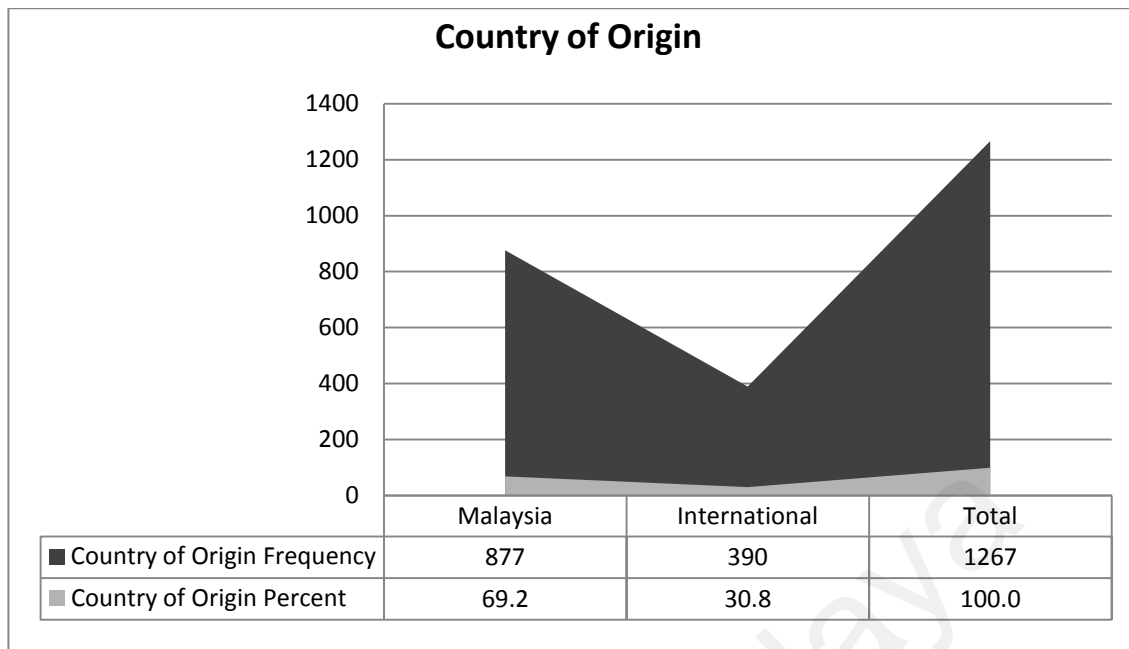


Figure 4.3 Respondent's Demographic Profile by Country of Origin

4.2.4 Ethnicity

Ethnicity in this study was analysed and is illustrated, to some extent, some similarities in ethnicity in the structure composition of the Malaysian population. As mentioned before, the largest ethnicity in the Malaysian population is Malay (67%), followed by Chinese (24.3%), Indian (7.4%) and 'Others' (1.3%), according to the Ninth Malaysian Plan 2006-2010.

In this study the descriptive analysis result showed the breakdown of ethnicity among the Malaysian respondents of this study. Total of 622 respondents at 70.9% were Malay (Bumiputra), 150 respondents at 17.1% were Chinese, 82 respondents at 9.4% were Indian, and 23 respondents at 2.6% was from 'Others' ethnicity. Figure 4.4 shows the description of the ethnicity profile related to ethnicity.

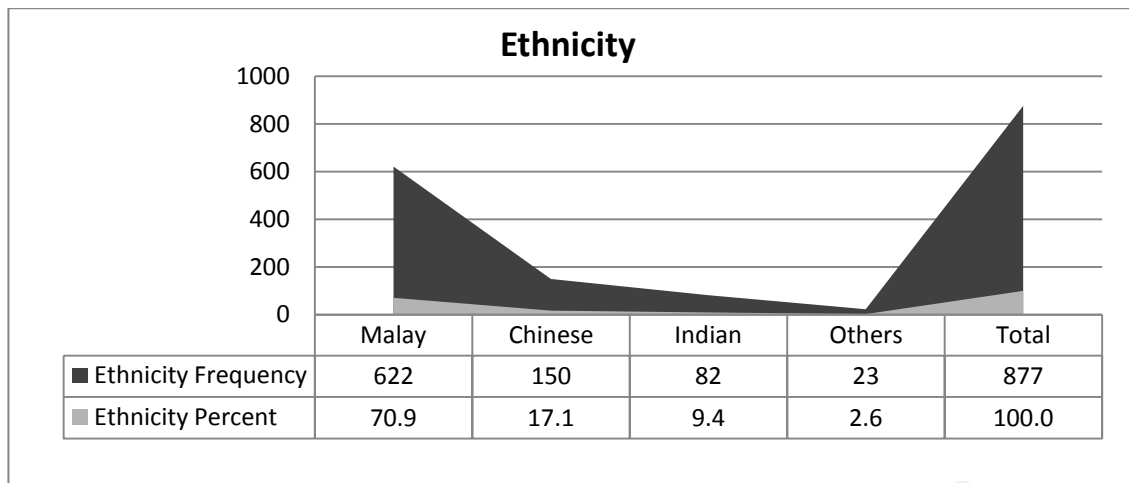


Figure 4.4 Respondent's Demographic Profile by Ethnicity

4.2.5 Religion

Statistics on religion indicate that the number of Muslim respondents were the largest among the sample of this study. Figure 4.5 explained that 988 respondents at 78% were Muslims, 117 respondents at 9.2% were Buddhists, 61 respondents at 4.8 % were Hindus and 101 respondents at 7.2% were from other religious backgrounds. Figure 4.5 shows the demographic profile of the respondents related to religion.

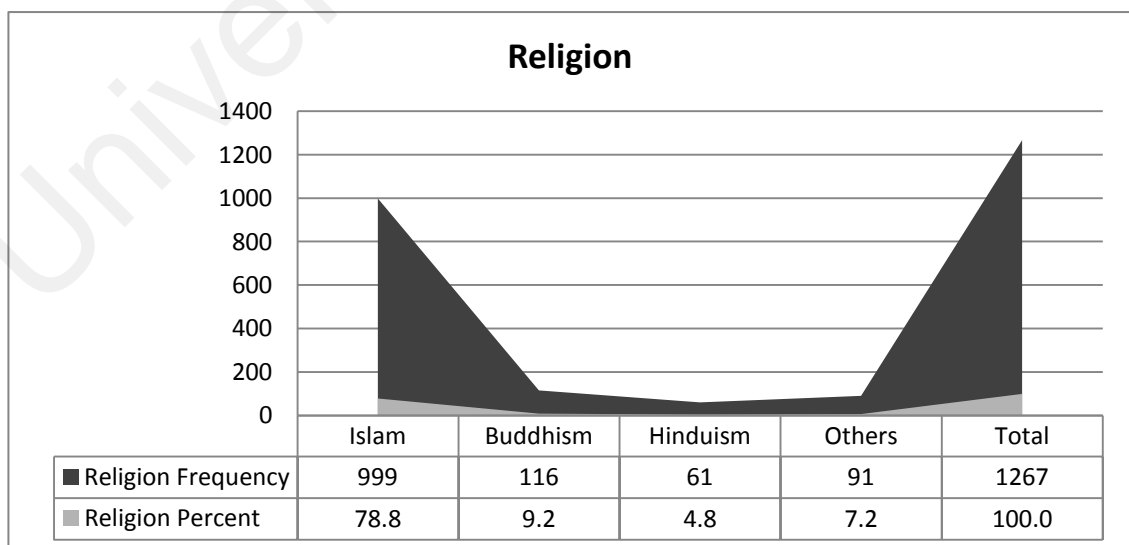


Figure 4.5 Respondent's Demographic Profile by Religion

4.2.6 Education

Regarding the education level of the respondents, the majority of 1,092 people were Masters' students at 86%, while 175 respondents at 14% were doctorate students.

Figure 4.6 shows the demographic profile of the respondents by education level.

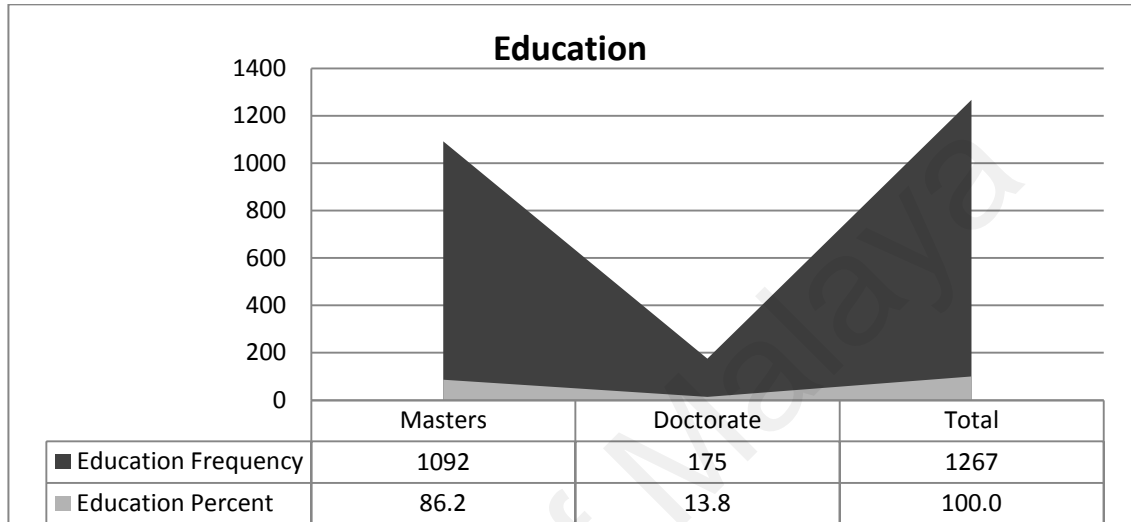


Figure 4.6 Respondent's Demographic Profile by Education Level

4.2.7 Crosstabulation

The crosstabulation of gender against ethnicity shows that there were differences among Malay ethnicity with respect to gender. The chi-square test result was significant at ($X^2 = 9.715$, $p = 0.021 < 0.05$). Out of 333 male respondents, the males constituted 67.7% of the Malay respondents, 20.1% of the Chinese respondents, 8.1 % of the Indian respondents, and 4.2 % of 'Others', whereas, out of 544 female respondents, the females constituted 73.0% of the Malay respondents, 15.3% of the Chinese respondents, 10 % of the Indian respondents, and 1.7 % of 'Others' respondents (Table 4.1).

In conclusion, the results showed the dominance of females among the Malay respondents followed by Chinese, Indian, and Others respectively.

Table 4.1 Gender vs. Ethnicity Crosstabulation							
			Ethnicity				Total
			Malay	Chinese	Indian	Others	
Gender	Male	Count	225	67	27	14	333
		% within Gender	67.6%	20.1%	8.1%	4.2%	100.0%
		% of Total	25.7%	7.6%	3.1%	1.6%	38.0%
	Female	Count	397	83	55	9	544
		% within Gender	73.0%	15.3%	10.1%	1.7%	100.0%
		% of Total	45.3%	9.5%	6.3%	1.0%	62.0%
Total		Count	622	150	82	23	877
		% within Gender	70.9%	17.1%	9.4%	2.6%	100.0%
		% of Total	70.9%	17.1%	9.4%	2.6%	100.0%

The crosstabulation of gender against religion in Table 4.2 shows that there was a significant difference among religion in respect to gender. The chi-square test result was significant at ($X^2 = 12.852$, $p = 0.005 < 0.05$). Out of 574 male respondents, the males constituted 79.4 % of the Muslim respondents, 9.6 % of the Buddhism respondents, 2.6 % of the Hinduism respondents, and 8.4 % of 'Others' respondents, whereas, out of 693 female respondents, the females constituted 78.4 % of the Muslim respondents, 8.8 % of the Buddhism respondents, 6.6 % of the Hinduism respondents, and 6.2 % of 'Others' respondents.

In summary, the results showed that Muslims were more among Malaysian religions followed by Buddhism, Hinduism, and Others.

Table 4.2 Gender vs. Religion Crosstabulation							
			Religion				Total
			Islam	Buddhism	Hinduism	Others	
Gender	Male	Count	456	55	15	48	574
		% within Gender	79.4%	9.6%	2.6%	8.4%	100.0%
		% of Total	36.0%	4.3%	1.2%	3.8%	45.3%
	Female	Count	543	61	46	43	693
		% within Gender	78.4%	8.8%	6.6%	6.2%	100.0%
		% of Total	42.9%	4.8%	3.6%	3.4%	54.7%
Total		Count	999	116	61	91	1267
		% within Gender	78.8%	9.2%	4.8%	7.2%	100.0%
		% of Total	78.8%	9.2%	4.8%	7.2%	100.0%

4.3 Reliability Test

After collecting the data, it was analysed by using appropriate statistical analysis techniques to find out whether the question of the research had been supported (Cavana et al., 2009). The analysis of the data depends on the statistics quality and its accurate reports (Babble, 1998). In order to evaluate the goodness of the measurement scale, a reliability test was used. Reliability indicates that the measures are free from error and hence, the results will be consistent (Zikmund, 2000). The reliability test indicates that the measurement scale is stable over time and also shows internal consistency of the instruments in scale measuring the construct, which show at the end, the goodness of the measure (Cavana et al., 2009). The internal consistency reveals the correlation within the subset of the measuring scale items (Zikmund, 2000).

Statistical package of social sciences (SPSS) version 20 was used to test the reliability of the constructs. Malhotra (2007) noted that Cronbach's alpha measured reliability. He added that a high correlation coefficient (near to 1) indicated greater reliability.

The higher the reliability values, the more prediction to the dependent variable (Hair et al., 2006). Table 4.3 shows the results of correlation coefficient (Cronbach's alpha) of the reliability test of the constructs in this study.

As seen in Tables 4.3 of the reliability results, Cronbach's alpha for all the constructs were above 0.85 in the context of postgraduate students in Malaysian public universities, showing that the scale used in measuring the internal consistency of the study constructs exceeded the satisfactory limit. As mentioned by Malhotra (2007), a value above 0.60 is satisfactory.

Table 4.3 : Reliability Test on Constructs

Constructs	Cronbach's Alpha
Enjoyment of helping others	0.91
Reputation	0.88
Self-efficacy	0.90
Interpersonal Trust	0.88
Humility	0.86
Religiosity	0.93
Knowledge Sharing Behaviour	0.89

4.4 Exploratory Factor Analysis

The main purpose of factor analysis is to minimise data and to come out with a set of interrelated variables to reflect the underlying structure of these variables (Hair et al., 2006). According to Malhotra (2007), the factor analysis is used to summarise and reduce data among interrelated variables and come out with a few underlying factors to explain the correlation among those variables. In addition, the new set of factors which come from the factor analysis will be used in further multivariate analysis (multiple regression). Prior to running the factor analysis, coding was given to the constructs and the items in order to simplify the interpretation of the results (Appendix B).

The factors are enjoyment of helping others (EHO) (which includes 5 items), reputation (6 items), self-efficacy (10 items), interpersonal trust (7 items), humility (13 items), religiosity (11 items) and knowledge sharing behaviour (5 items).

The loadings indicate that the items were sorted into eight factors as showed in Table 4.4. Factor loadings above 0.50 are considered practically significant (Hair et al., 2006). The results indicate that all the factor loadings were above 0.60. First run for factor analysis shown in (Appendix B2). The second run shown in Table 4.4 was cleaned up and discarded the unused elements.

As shown in Table 4.4, the humility construct was split into two factors: 6 and 8. Therefore, the six items under factor 4 (HUM3, HUM4, HUM5, HUM2, HUM6, HUM7) was labelled as scholar humility and the other four items loaded under factor 5 (HUM11, HUM12, HUM13, HUM10) was labelled as general humility. The eight factors were religiosity, self-efficacy, interpersonal trust, scholar humility, general humility, reputation, the enjoyment of helping others and knowledge sharing behaviour.

In addition, the results indicate that the Kaiser-Meyer-Olkin (KMO) measuring the sampling adequacy was 0.934, indicating that the factor analysis was significantly appropriate with the data collected, while the Barlett's test Sphericity was highly significant with a p-value less than 0.01, indicating the suitability of the factor analysis. The eight factors with more than 1.0 eigenvalue represent 61.770 in terms of the total variance explained in the dependent variable. Moreover, the items (SE5 and HUM1, HUM9) were removed from the factor analysis for the reason that their factor loading was less than 0.60. HUM8 was loaded alone under one factor, but was dropped as according to Pallant (2007), three or more items loaded under one factor is preferable.

The factor analysis showed the related items which come together and loaded strongly under a particular factor to measure a certain construct. Table 4.4 shows the items which will be used to measure the eight constructs of the research model.

The items that measure humility were collected from different sources (Estephen, 2005; Kilroy, 2009; Rowden, 2009). Therefore, the resulted two factors of humility might be due to several reasons:

Firstly, the type of respondents who answer the questions that measure humility such as managers, subordinates, husbands or wives, professors, students, doctors, nurses and the country of the respondents. Respondents in each country have their own culture which may differ from others in different countries. For example, Singhapakdi et al. (1999) stated that culture exists when a group of people have common beliefs, customs

and traditions. He explained that, different cultures among customers affect their ethical behaviour differently. Accordingly, this study expected that respondents might perceive humility differently according to their culture.

Secondly, respondents from urban and rural areas also may have different perspectives regarding humility. For instance, Amato (1981) reported that behaviour of helping others in rural areas (Towns) was higher than in urban areas (Cities). Thus, differences in the respondents' context might influence their views toward humility.

In summary, two analyses were conducted to the data to increase the accuracy of the judgment to use factor analysis (the Kaiser-Meyer-Olkin measure and Bartlett's Test of Sphericity). The Kaiser-Meyer-Olkin measure proved the appropriateness of the data collected, while Bartlett's test of Sphericity showed high statistical significance of the correlation among the variables. The factor analysis was carried out to determine the related items that measure the constructs, which is supposed to measure and discard the items which are not reliable enough for measuring the constructs and establishing consistency among the items. The results showed that only four items were discarded (self-efficacy5, humility1, humility8, and humility9) while the remaining items were retained for further analysis.

Table: 4.4 : Factors 1, 2, 3, 4, and 5 for REL, SE, and INTRUST, REP and EHO

Items	Factors				
	1 REL	2 SE	3 INTRUS	4 REP	5 EHO
REL9	.814				
REL7	.806				
REL6	.792				
REL8	.777				
REL2	.768				
REL3	.765				
REL11	.756				
REL1	.727				
REL10	.726				
REL5	.717				
REL4	.676				
SE3		.732			
SE7		.725			
SE9		.724			
SE8		.719			
SE4		.714			
SE6		.703			
SE2		.700			
SE1		.651			
SE10		.630			
INTRUST2			.776		
INTRUST3			.773		
INTRUST4			.760		
INTRUST1			.688		
INTRUST6			.681		
INTRUST5			.681		
INTRUST7			.665		
REP3				.835	
REP6				.799	
REP4				.785	
REP5				.773	
REP2				.733	
REP1				.600	
EHO2					.841
EHO3					.805
EHO1					.805
EHO5					.795
EHO4					.790
Eigenvalue	12.529	5.044	3.700	3.276	2.709
Variance explained	12.702	9.626	7.918	7.038	6.944
REL = religiosity, SE = self-efficacy, INTRUST = interpersonal trust, REP = reputation, EHO = enjoyment of helping others.					

Table: 4.4 : ‘Continued’ Factors 6, 7, 8 for SHUM, KSB, and GHUM

Items	Factors		
	6	7	8
	SHUM	KSB	GHUM
HUM3	.765		
HUM4	.752		
HUM5	.735		
HUM2	.713		
HUM6	.693		
HUM7	.628		
KSB3		.803	
KSB2		.791	
KSB4		.771	
KSB1		.699	
KSB5		.671	
HUM11			.759
HUM12			.750
HUM13			.658
HUM10			.656
Eigenvalue	2.455	1.777	1.247
Variance explained	6.874	6.208	4.461

1. Total variance extracted by the eight factors 61.770 %, KMO = .934, Barlett's Test <.001

2. Extracted method: Principal Component Analysis.

3. Rotated method: Varimax

SHUM = scholar humility, KSB = knowledge sharing behaviour, GHUM = general humility.

4.5 Constructs Reliability Assessment

Employment of the factor analysis technique enabled reduction of the data collected and the results revealed that variables that inter-correlated were gathered together under each factor measuring a particular construct. Each construct now is identified with its own items that distinguish it from other constructs. This step results in losing some items from the measure. Since some items were dropped and some constructs were created, such as scholar humility and general humility, a second reliability test was carried out for the entire construct.

As seen in Table 4.5, the results show that the construct measures were consistent with high Cronbach's alpha. The Cronbach's alpha values were 0.91 for the enjoyment of helping others, followed by 0.88 for reputation, 0.90 for self-efficacy, 0.88 for interpersonal trust, 0.85 for scholar humility and 0.79 for general humility, 0.93 for religiosity and 0.89 for knowledge sharing behavior. The high values of Cronbach's

alpha were above the recommended value indicating that the construct was well established and the reliability was tested before in previous studies.

Table 4.5 : Summary of the Reliability Test

Variables	No. of Items	Cronbach's Alpha
Enjoyment of Helping Others Dimension: 1- Enjoyment of Helping Others	5	0.91
Reputation Dimension: 1- Reputation	6	0.88
Self-Efficacy Dimension: 1- Self-efficacy	9	0.99
Interpersonal Trust Dimension: 1- Interpersonal Trust	7	0.88
Humility Dimension: 1- Scholar Humility 2- General Humility	6 4	0.85 0.79
Religiosity Dimension: 1- Religiosity	11	0.93
Knowledge Sharing Behaviour Dimension: 1- Knowledge Sharing Behaviour	5	0.89

The following step discusses the results of the multivariate analysis, particularly multiple regression, and testing of the research hypotheses of this study, which has been derived from the literature review and the proposed conceptual framework.

4.6 Hypotheses Testing Procedures and Techniques

In this section, the Pearson's correlation matrix was calculated to understand the preliminary relationship between the constructs before examining the proposed hypotheses, whereas the normality test was applied to fulfill the assumption of normal distribution of the model before running the regression technique. The multiple regression technique was used to test the hypotheses of the direct relationship between the non-monetary variable and knowledge sharing behaviour and how independent variables predict the dependent variable, as well as to test the hypotheses of the

moderating effects proposed. Moreover, the Coefficient of Multiple Determinations, R^2 was used to determine the model fit and the predictive power of the independent variables. In order to examine the moderating effects of religiosity, moderated multiple regression (interaction effect) was used. The Multicollinearity or high correlation between variables will also be checked out. Finally, the t-test will be conducted to find out who shares knowledge more, Malaysians or International students.

4.6.1 Pearson's Correlation

Pearson developed a measure called the product-moment coefficient of correlation evidenced by the symbol r to quantify the degree of association among the variables and also to show the directions of the relationships, whether positive or negative (Hopkins, Hopkins, & Glass, 1996). The correlation coefficient (Pearson correlation) has been used in behavioural science research as an analysis instrument that is required to give maximum precision of the degree of association among variables since 1900 (Hopkins et al., 1996).

Burns and Bush (1999) suggested that the correlation coefficient is said to be very high if its value ranged between (± 1 and $\pm .81$) while a range between ($\pm .80$ and $\pm .61$) is considered moderate. Meanwhile, the values of r between ($\pm .60$ and $\pm .41$) show low consideration and between ($\pm .40$ and $\pm .21$) is regarded as very weak. If the correlation values equal or are less than $\pm .20$, it will be considered as uninterested value to marketing researchers.

The Pearson's correlation or the product-moment correlation will be applied in light of (Burns & Bush, 1999) guidelines in order to assess the correlation among the variables that are entered into the regression model and to understand the directions of the relationship (\pm) among variables.

4.6.2 Normality

The normality distribution is usually used to explain a symmetrical, bell-shaped curve showing that the largest frequencies of the data scores were placed in the middle, and the smaller frequencies concentrated in the extreme tails (Pallant, 2007). The normality test is employed in order to determine how the scores of the data set are normally distributed on the dependent variable. The normality test is useful to determine which technique is suitable to use in testing the hypotheses, parametric or non-parametric. Yang (2006) reported that the normality test is not an issue to worry about, since the study sample is larger than 100 respondents.

According to Neter et al. (as cited in Suliman & Abdulla, 2005, p.726) '*When testing for normality (or any other distribution), it is not frequently important whether the population is exactly normal or is simply close enough to a normal distribution...Many statistical tests that assume a normal population are quite robust and hence are satisfactory even in the absence of exact normality*'. However, with a sample size that exceeded 1000 respondents in this research, it is considered large enough; the normality distribution was used in choosing the technique (parametric or non-parametric) that will be used to test the hypotheses.

Assessing normality, to some extent, can be done by attaining skewness and kurtosis values, and also can be measured by using SPSS techniques such as the explore option (Pallant, 2007). In this research, assessing normality will be attained by two kinds of SPSS analysis techniques – the histogram of standardised residual and normal P-P plot of standardised residual. According to Coakes and Steed (2007), four assumptions are required to run the multiple regression technique that is the number of the cases must be five times more than the independent constructs and the outliers must be detected or modified. Moreover, multicollinearity must be investigated and normality

should be employed to avoid underestimation of the strength of the relationship. Therefore, these assumptions will be assessed during regression analysis. In addition, the slight deviation from the assumption do not make much difference if the sample size is large enough (Mokhlis, 2006b). The normality of the distribution in this study will assess the scores for total knowledge sharing behaviour for the entire sample. Moreover, the outliers were also examined. According to Hair et al. (2006), the outliers are the extreme observations that differ from the other observations' characteristics, which lie outside the normal distribution shape. In order to check the outlier cases, wise diagnostics in linear regression will be applied to normalise the data before testing the hypotheses by regression analysis.

4.6.3 Multiple Linear Regression

Multiple regressions analysis is a multivariate technique used in this study to analyse the data collected and requires a single dependent variable and more than one independent variable (Malhotra, 2007). In other words, multiple regression is used to simplify the examination of the influence of several independent variables in predicting a single dependent variable. According to Nardi (2006), multiple regression is used to understand how several independent variables predict or explain the correlation with one dependent variable. He added that multiple regression used to be called the Ordinary Least Squares (OLS) Linear regression. In this research, multiple regression will be used to find out the non-monetary factors that predict knowledge sharing behavior. Moreover, it will examine the interaction effects of religiosity on the relationship between non-monetary factors and knowledge sharing behavior. Morgan and Griego (1998) asserted that when using multiple regression, the dependent variable must be an interval scale variable that shows normal distribution, while the independent variable must also be an interval scale variable. In addition, in using multiple regression, the independent variable can also be dichotomous or a dummy variable, usually a

nominal variable such as gender, which should be recoded and converted to the numerical level.

The first step is to present the results of multiple regression and test the proposed hypothesis H1, which include (H1a, H1b, H1c, H1d, H1ea, and H1eb) to find out the association between the independent variables (non-monetary variables) and the dependent variable (knowledge sharing behaviour). The second step is, to test the interaction relationship between the independent variable and the dependent variable in the presence of religiosity. The moderating effect or interaction effect means there is another independent variable (religiosity) used to change the effect on the relationship between the independent variable (non-monetary variable) and the dependent variable (knowledge sharing behaviour). The examination of the moderating effect will test the remaining hypotheses.

In the later discussion of the results, the total variance was explained by the independent variables on the dependent variable. However, the multiple regression helps to identify the degree and the direction (positive or negative) of the relationship between several independent variables and the dependent variable (Hair et al., 2006).

4.6.4 Coefficient of Multiple Determinations

To measure the strength of association between the independent variables and the dependent variable, one should look to the square of the multiple correlation coefficient (R^2), which has also been called the coefficient of multiple regression (Malhotra, 2007). The technique is used to measure the predictive power of the independent variables. It estimates the proportion of the variance explained by the independent variables on the dependent variable and the value of R^2 would vary between 0 to 1. Hair et al. (2006) mentioned that the higher the value of R^2 (near to 1), the better the fit of the model or prediction of the dependent variable by the independent

variables. Hence, R^2 will be used in this study as a measure of the prediction of the independent variable and to estimate the model fit.

In order to interpret the results of the multiple regression, it is very important to refer to the value of the unstandardised (b) and standardised beta (β) regression coefficients. According to Hair et al. (2006), the regression coefficient (b) shows the estimation of the value of direct association with the independent variable. In other words, it is used to select the best predicted variable based on the value of the regression coefficient. The greater the value of correlation coefficient, the stronger the independent construct in predicting the dependent variable. While the standardised coefficient beta (β) helps to compare the direct effect of the independent variables individually on the dependent variable, and will be able to determine which independent variable has the highest impact on the dependent variable (Hair et al., 2006). Moreover, Nardi (2006) asserted that standardised coefficient beta is more appropriate to use than b coefficient if the variables are in different units of measure. Moreover, the *F test* is used to test the null hypothesis, which tells us that there is no statistical difference in the means of groups for one dependent variable. Then the null hypothesis will be rejected and the alternative hypothesis will be accepted (Hair et al., 2006).

4.6.5 Moderator/ Interaction Effect

The term of moderator or interaction will be used interchangeably in this study. A moderator effect is an effect of another independent variable (moderator) that changes the form of the relationship between the independent variable and dependent variable. It is also called interactive effects (Hair et al., 2006). According to Aguinis (1995), the moderating effects exist when the relationship between the independent variable and dependent variable differ, as a result of the function of an influence value of a third variable. For the test pertaining to the hypothesised moderating effects and to detect its

effects, the moderated multiple regression was used (Aguinis, 1995). In order to form the moderator term, the independent variable will be multiplied by the moderator variable which creates a new variable that is the moderator (Hair et al., 2006). An important point that must be taken into account is that the moderator effects exist when the interaction effects are significant. In addition, the test of the moderator effect or the interaction effect is not directly relevant to the significant effects of the main independent and moderator variable (Baron & Kenny, 1986).

4.6.6 Multicollinearity

The high correlation among the independent variables that reduces the ability of the independent variables to predict the dependent variables and decreases the total variance in the dependent variable is called Multicollinearity (Hair et al., 2006). According to Lappin, Brandt, Husak, Macedonia, and Kemp (2006), a correlation coefficient at 0.7 is an indication of multicollinearity that might influence the regression model estimates. This situation might affect the statistical significant sign of the independent variables to become insignificant, and change the beta coefficient sign to negative, when the theory or common sense proposes a positive relationship between the independent variables and the dependent variables (Grapentine, 1997). In addition, the high correlation between independent variables can be detected from the tolerance level and the variance inflation factor (VIF) in the regression analysis report table by SPSS. According to Hair et al. (2006) a high variance inflation level indicates that there is multicollinearity among the independent variables. The tolerance level must be close to 1.0, or more than 0.1, whereas the level of variance inflation factor must be below 10.0 (Hair et al., 2006). In this study, the tolerance and variance inflation factor will be examined to detect the multicollinearity among the independent variables. According to Pallant (2007), if the correlation among the variables exceeds .70, it is seriously recommended to remove one of the variables that show high score in the inter-

correlated independent constructs from the regression model. However, whenever there is a high score of correlation or a detection of multicollinearity, the variable that causes this problem will be dropped from the regression model.

4.6.7 T-test

In this section, the t-test will be used to find out whether there is a difference between Malaysian and International students in terms of knowledge sharing behaviour. If the F-test is significant ($p < \text{less than } 0.05$), then the null hypothesis will be rejected indicating that there is no difference between the variance of the two groups. Therefore, the alternative hypothesis will be accepted, which assumes that the variance is not equal. Then the t-test table will show the difference in the mean of both groups.

4.7 Pearson Correlation Analysis

The Pearson correlation was applied to investigate the prior relationship between the constructs that were identified in this study and to find out the directions between each couple of variables, before conducting the multiple regression technique to test the research hypotheses. The results of the Pearson correlation reveal that all the variables were significant and positively correlated, and that there was association between the variables. The highest correlation coefficient was for interpersonal trust, .520, followed by self- efficacy, .373, the enjoyment of helping others, .350 and religiosity, .339. Meanwhile, the weakest correlation was for general humility, .222. The summary of results of the correlation analysis that is used for all the variables in the study is presented in Table 4.6.

Table 4.6 : Correlations

Variables	M	SD	V1	V2	V3	V4	V5	V6	V7	V8
EHO	.45	520	(.910)							
REP	.81	656	268**	(.878)						
SE	.97	506	393**	394**	(.897)					
TRUST	.74	555	302**	249**	352**	(.880)				
S HUM	.00	592	264**	187**	271**	297**	(.852)			
GHUM	.81	627	242**	165**	222**	226**	577**	(.790)		
REL	.88	732	246**	162**	231**	279**	223**	211**	(.932)	
KSB	.95	584	350**	232**	373**	520**	283**	222**	339**	(.885)

Note: Alpha reliability represented between two brackets. EHO = enjoyment of helping others, REP = reputation, Se = Self-efficacy, Trust = interpersonal trust, S HUM = scholar humility, G HUM = general humility, REL = religiosity, V1 – V8 = variable (EHO) – variable (KSB), M = mean of the variables, SD = standard deviation of the variables. ** Significant at $P < .01$

4.8 Normality Test

Before testing the hypotheses and using the regression technique, normality must be examined (Mokhlis, 2006b). The normality test was conducted and the results showed non-normal distribution. As seen below in Figure 4.7, the histogram of the standardised residual shows slight skewness and some smaller residual on the extreme tails.

Moreover, Figure 4.8 shows that the P-P Plot of the standardised residuals as compared to the normal distribution. It is clear that the plotted points are not close enough to the normal line, which means that the residuals slightly deviated from the normal line.

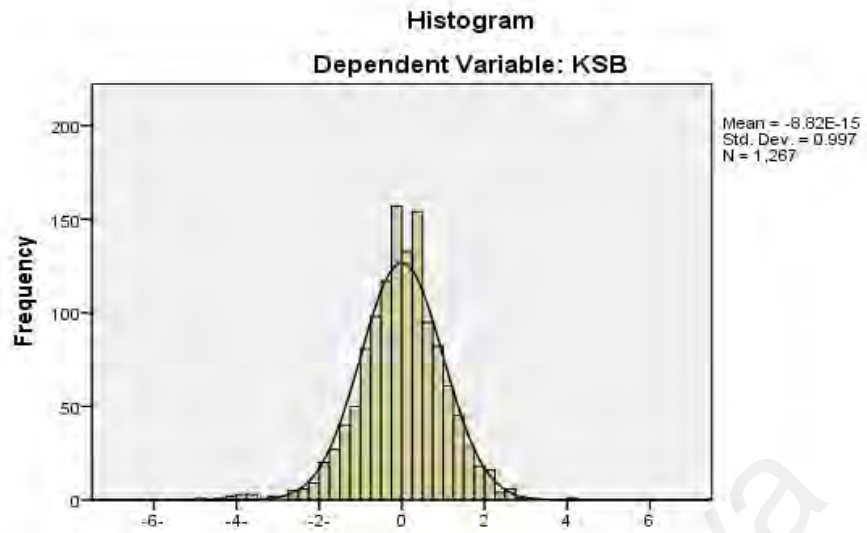


Figure 4.7 Skewness of the Regression Standardised Residual

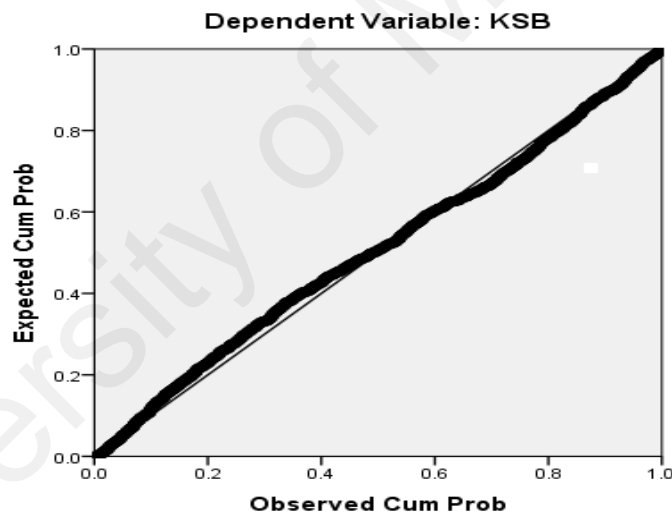


Figure 4.8 Deviation of the P-P Plot of Regression Standardised Residual

In addition, the casewise diagnostics detected some outliers as seen in Table 4.7. A total of 17 cases were detected as outliers, as shown in the case number column. Therefore, to treat the outlier problem, the actual values shown in column (KSB) will be transformed to the value shown under column (predicted value) in order to adjust the data.

Table 4.7 Casewise Diagnostics - Detecting the Outliers

Case No.	Std. Residual	KSB	Predicted Value	Residual
57	-3.515	2	4.05	-1.651
155	3.001	5	3.71	1.285
182	-3.821	2	3.59	-1.794
200	-4.296	2	3.82	-2.017
369	-3.555	2	3.47	-1.669
433	-3.003	2	3.61	-1.410
439	-3.112	2	3.53	-1.332
480	3.007	5	3.5	1.299
483	-3.007	2	3.21	-1.412
528	-3.998	2	3.88	-1.877
649	-4.164	2	4.16	-1.955
656	-3.519	1	3.05	-1.652
780	3.012	5	3.70	1.301
1024	-4.836	1	3.27	-2.271
1054	4.144	5	3.05	1.946
1058	-3.821	3	4.79	-1.794
1187	-3.778	2	3.77	-1.774

a. Dependent Variable: KSB

Anderson, Lodih and Weitz, and Wulf (as cited in Abdullah, 2007) stated that transformation would create extra problems which change the actual data. Pallant (2005) stated that some statistical writers suggest dropping all the outliers from the data file, whereas, others recommend changing the values of the less extreme values, which means to keep the respondents in the analysis, so as to maintain the statistical analysis without distorting it. However, in this research, transformation was used for the reason that the changes were only in 17 cases out of 1,267 (that is 1.3%), which was regarded as tiny changes. Then, the analysis was rerun to see the changes in the results.

The histogram of standardised residuals appears to be convincingly normally distributed, as seen in Figure 4.9. This result was also supported by the result of the normal P-P plot standardised residual, shown in Figure 4.10. The actual data values fell and were plotted closely against the diagonal.

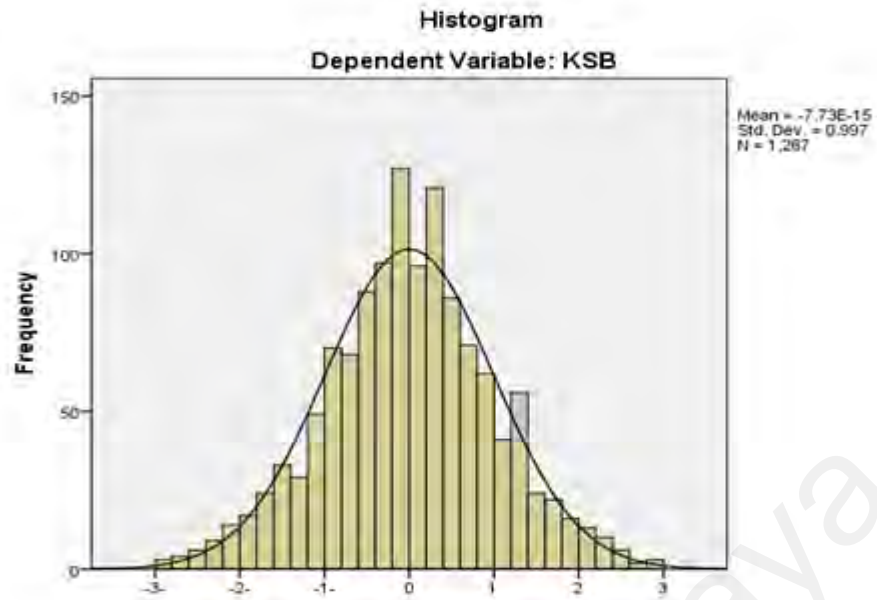


Figure 4.9 Normal Distribution of the Regression Standardised Residual

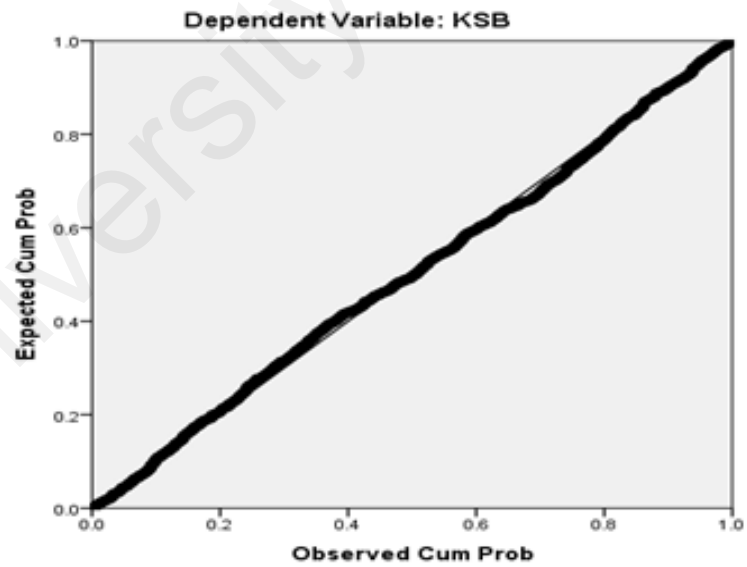


Figure 4.10 Normal P-P Plot Regression Standardised Residual

4.9 Testing Research Hypotheses

Based on previous literature review and the suggested model of this study, five hypotheses were developed to answer the questions of this research. In order to answer question 1: “Which non-monetary factors motivate postgraduate students to share knowledge in the university?” the following test was conducted.

4.9.1 Testing Research Hypothesis (H1)

Hypothesis H1 includes (H1A, H1B, H1C, H1D, H1E1, H1E2, and H1F). The regression analysis was used to test these hypotheses. Table 4.8 below provides the results of the key components of the regression analysis. At the beginning, this study checked out whether the religiosity variable had an effect as a moderating construct on the research model in the presence of the other independent variables with the dependent variable. ANOVA was used to test the goodness of fit of the model or the significance of the overall regression models. Religiosity was controlled in the regression model. The output showed that there were two models. The first model consisted of religiosity as a moderator construct with significant (F value = 161.423, $p < 0.000$ less than .01) with adj. R^2 .112, indicating that 11.2% of the dependent variable was explained by religiosity and the standardised coefficient beta was ($\beta = .336$, $t = 12.705$, $p < .01$), showing that religiosity as a moderator had a predictor effect on the dependent variable, with positive sign. The second model presented the seven independent variables (enjoyment of helping others, reputation, self-efficacy, interpersonal trust, scholar humility, general humility and religiosity) with one dependent variable (knowledge sharing behaviour) to determine the total variance explained by all the dependent variables. The F value was calculated and the regression model found it statistically significant at (F value = 117.283, $p < 0.000$ less than .01). Five variables from the seven were found significant (enjoyment of helping others, self-

efficacy, interpersonal trust, scholar humility and religiosity). The effects of the other two variables (reputation and general humility) were not significant.

The strength of the model, as seen in the results represented in the adjusted R^2 value, was .391, which means that around 39.1% of the variance on the dependent variable is explained by only five independent variables in the regression model.

Finally, the most important point in the regression analysis result was to find out the actual impact of each and every independent variable in their prediction contribution on the dependent variable, which can be specified by the standardised coefficient (beta). The standardised coefficient value of the independent variable can be compared together and shows the strength of the variables, as well as, the relationship direction (positive, negative) with the dependent variable.

Table 4.8 shows the regression coefficient value (Beta) for interpersonal trust, religiosity, self-efficacy, the enjoyment of helping others and scholar humility were statistically significant at ($p < .01$). It is clear from the results that interpersonal trust has the strongest coefficient ($\beta = .371$, $t = 14.970$, $p < .01$), followed by the enjoyment of helping others ($\beta = .177$, $t = 7.123$, $p < .01$), religiosity ($\beta = .138$, $t = 5.882$, $p < .01$), self-efficacy ($\beta = .126$, $t = 4.806$, $p < .01$) and scholar humility ($\beta = .082$, $t = 2.955$, $p < .01$) respectively. In contrast, as seen in Table 4.8, the reputation variable shows ($\beta = .010$, $t = .414$, $p > .1$) and general humility variable shows ($\beta = .008$, $t = .307$, $p > .1$), which means they have a positive sign of relationship with knowledge sharing behaviour but is not significant. In addition, to test the likely multicollinearity in the regression analysis, the tolerance level and the variance inflation factor were examined in each regression analysis report.

Table 4.8 : Results of Multiple Regression - Moderator Effect of REL and Direct Predictors vs. KSB

Predictor Variables	St. Beta	T-value	Collinearity Statistics	
			Tolerance	VIF
Model 1				
Religiosity	.336	12.705***	1.000	1.000
Adj. R ²	.112			
F	161.423***			
Model 2				
EHO	.177	7.123***	.775	1.290
REP	.010	.414	.817	1.224
SE	.126	4.806***	.705	1.418
INTRUST	.371	14.970***	.783	1.278
S HUM	.082	2.955***	.622	1.608
G HUM	.008	.307	.652	1.534
REL	.138	5.882***	.868	1.152
Adj. R ²	0.391			
F	117.283***			

Dependent Variable: Knowledge Sharing Behaviour, St. = standardised, EHO = enjoyment of helping others, REP = reputation, SE = self-efficacy, INTRUST = interpersonal trust, S HUM = scholar humility, G HUM = general humility, REL = religiosity, *** significant at $p < .01$, ** significant at $p < .05$

Since the tolerance levels are below 1 and the variance inflation factor is below 10 (Hair et al., 2006), the multicollinearity will not be considered as a problem. Table 4.8 shows that no multicollinearity occurred between the independent variables.

In conclusion, first, it is obvious that the positive sign of standardised coefficient beta on interpersonal trust represents that those respondents who have a mutual trust with their colleagues tend to practice sharing knowledge with colleagues more than those who have less interpersonal trust. Second, the positive relationship between religiosity and knowledge sharing behaviour indicates that those respondents who are religious share their knowledge with colleagues more than those who are not religious, and their knowledge sharing behaviour was more than those with less religiosity. Third, the positive sign of the regression standardised coefficient beta on self-efficacy indicates that respondents with more self-efficacy (self-confidence) shared their

knowledge with colleagues more than those who have less confidence in themselves, and their knowledge sharing behaviour were more than those with less self-efficacy. Fourth, the enjoyment of helping others has a positive sign of regression of coefficient (beta) which indicates that respondents who enjoy helping others share their knowledge with colleagues more than those who do not enjoy helping others, and their knowledge sharing behaviour were more than those who had less enjoyment in helping others. Fifth, the positive sign of beta coefficient on scholar humility reveals that respondents who are perceived to be humble tend to share their knowledge with colleagues more than those with less humility. Though the variance explained by the independent variable was 39.9%, the remaining unexplained variance of 60.1% will be explained by other variables. This result examines the first hypothesis and sub-hypotheses to answer the first question.

In the results of factor analysis, humility was divided into two factors. When both scholar humility and general humility were entered into the regression analysis, the results showed that scholar humility was significant and positively related to knowledge sharing behavior, as was predicted in the theory, whereas, general humility, was statistically not significant.

In conclusion, hypotheses H1A, H1C, H1D, H1E1, and H1F were supported and H1B and H1E2 were not supported.

4.9.2 Testing Research Hypothesis (H2)

Hypothesis 2 was presented to answer research question 2. Hypothesis H2 was divided into six sub-hypotheses (H2A, H2B, H2C, H2D, H2E1 and H2E2). In this section, the moderation effect or the interaction effect of religiosity will be presented with the six non-monetary variables to determine what role religiosity plays in the

relationship between the predictor variables and the dependent variable. To test this hypothesis, the multiple regression analysis was applied.

Table 4.9 represents the summary of the regression analysis results of the interaction effect of religiosity as a moderator variable with the six independent variables (enjoyment of helping others, reputation, self-efficacy, interpersonal trust, scholar humility, and general humility). The details of the regression model that shows the interaction effect of religiosity with the independent variables are collectively shown in Appendix D. Furthermore, the interaction of religiosity with each independent variable will be explained one by one as follows.

Firstly, the interaction effect of religiosity with the enjoyment of helping others (REL*EHO) testing **H2A**. The original interaction model is demonstrated in Appendix D1. Table 4.9 shows that the adjusted R^2 was at .388 which indicates that this regression model accounted for 38.8% of the variance explained in the dependent variable by the independent variables. In order to test the goodness of fit for the regression model, ANOVA was applied. The result of goodness of fit shows a highly statistical significance at (F value = 134.608, $p < .01$), and indicates that the regression model was good, and that the null hypothesis was rejected and the alternative hypothesis was accepted. In addition, from the results of the regression analysis, it can be observed that the standardised coefficient value shows the strength of the independent variables and their direction to the dependent variable.

As shown in Table 4.9, the standardised coefficient value of (REL*EHO) were significantly related to the dependent variable, knowledge sharing behaviour. The coefficient beta for the variable REL*EHO was ($\beta = .234$, and $t = 9.322$ $p < .01$).

In summary, it was clear that in this multiple regression report, particular concern was given to the interaction effects of religiosity with the enjoyment of helping others in affecting knowledge sharing behaviour.

It was observed that the regression of coefficient beta of the interaction effects (REL*EHO) was significant with a positive sign towards knowledge sharing behaviour. This interaction effect means that the high religiosity of those respondents, who enjoy helping others, encourages them to share knowledge regularly more than those who are less religious and have less enjoyment when helping others. This result was found supportive to the hypothesis **H2A**.

H2A Religiosity positively moderates the relationship between the enjoyment of helping others and knowledge sharing behaviour.

Secondly, the multiple regression analysis was conducted to examine the interaction effects of religiosity and reputation on the dependent variable knowledge sharing behaviour. Six variables were entered into the regression model: enjoyment of helping others, self-efficacy, interpersonal trust, scholar humility, general humility and religiosity*reputation (see Appendix D2). In Table 4.9, the interaction effect of REL*REP was found statistically significant ($F = 132.846, p < .01$). The model strength was reported by the adjusted $R^2 = .385$. This indicates that 38.5% of the variance in knowledge sharing behaviour was explained by the independent variables reported in the regression model. The results of the regression analysis represent the power of the test by the statistical significance of the regression coefficient Beta. As seen in Table 4.9, knowledge sharing behaviour was significantly related to REL*REP ($\beta = .113, t = 4.439, p < .01$). The direction of the independent variable (REL*REP) to the dependent variable was positive and statistically significant.

In the model testing the effects of the moderating effect of (REL*REP) variable, the results proved that there was an interaction effect on the relationship with knowledge sharing behaviour. This result indicates that those respondents who are more religious and allocate a great importance to reputation, more often tend to share knowledge with their peers. This result supports the hypothesis:

H2B Religiosity moderates the relationship between reputation and knowledge sharing behaviour.

Thirdly, the result of the regression analysis examined the moderating effects of religiosity*self-efficacy (see Appendix D3). Table 4.9 shows that the strength of the model related to the REL*SE variable was reported in the results and shown in the adjusted R² value of .391, which suggested that 39.1% of the variation in the dependent variable (knowledge sharing behaviour) was accounted for by the seven independent variables, which were entered into the regression model.

The overall F-test of the regression model for the interaction effect of (REL*SE) was found statistically significant ($F = 136.364$, $p < .01$) with seven predicted variables. The result of the regression analysis in Table 4.9 suggests that knowledge sharing behaviour was related significantly to REL*SE ($\beta = .200$, $t = 7.725$, $p < .01$). The beta coefficient identified the strength of the independent variable (REL*SE) in predicting the dependent variable. The direction sign of the relationship between the independent variable and the dependent variable was positive, which was represented in the beta coefficients value and was statistically significant. The interpretation of this relationship indicates that those students who are more religious and confident in themselves tend to share more knowledge than those who are less religious and have less self-efficacy.

The result of the moderating effects of religiosity and self-efficacy on knowledge sharing behaviour supports the assumption:

H2C Religiosity moderates the relationship between self-efficacy and knowledge sharing behaviour.

Fourthly, Table 4.9 shows the summary results of the regression analysis model to examine the interaction effect of religiosity and interpersonal trust (see Appendix D4). Generally, the F test of the regression model was statistically significant ($F = 121.046, p < 0.01$) and the adjusted R^2 was .363, indicating that 36.3% of the variance in the dependent variable was predicted by the six predictor variables, which was entered into the model. The result of the interaction effect of REL*INTRUST revealed that there was a significant relationship between knowledge sharing behaviour and REL*INTRUST ($\beta = .381, t = 14.961, p < .01$). The beta coefficient value indicates the relative importance of the strength of the independent variable effects on knowledge sharing behaviour. There was positive signs of beta coefficient on the interaction effect of REL*INTRUST on knowledge sharing behavior, indicating that respondents who are more religious and have an inner trust toward colleagues tend to share their knowledge habitually much more than those who are less religious and have less trust in others.

The result of the interaction of religiosity and interpersonal trust on knowledge sharing behaviour was found statistically significant with a positive sign on beta coefficient, which provides support to the hypothesis number:

H2D Religiosity moderates the relationship between interpersonal trust and knowledge sharing behaviour.

Fifthly, the regression analysis model referred to the interaction effect of religiosity and scholar humility on knowledge sharing behavior (see Appendix D5). The summary of the results is demonstrated in Table 4.9. The F test shows a strong relationship between the independent variable (REL*S HUM) with knowledge sharing behaviour ($F = 136.637, p < .01$). The strength of the regression model reported by the

adjusted R^2 value of 0.391 reveals that the six independent variables that were entered into the model explained 39.1% of the variance in the dependent variable knowledge sharing behavior.

Table 4.9 shows that the independent variable (REL*S HUM) significantly relates to knowledge sharing behavior. The beta coefficient for religiosity with scholar humility was ($\beta = .178$, $t = 6.658$, $p < .01$). Moreover, there was a positive sign on the relationship between the interaction effects of religiosity and scholar humility on knowledge sharing behaviour, suggesting that respondents who are religious and humble are more likely to share their knowledge with colleagues. Therefore, the result of the regression analysis of interaction effects of the moderator variable religiosity and scholar humility on knowledge sharing behavior supports the hypothesis that says:

H2E Religiosity moderates the relationship between scholar humility and knowledge sharing behaviour.

Since the humility variable was divided into two dimensions (in the results of the factor analysis): to scholar humility and general humility, and their definitions were mentioned in Chapter Three Section 3.4.5, thus, an additional hypothesis was provided:

H2F Religiosity moderates the relationship between general humility and knowledge sharing behaviour.

Sixthly, the multiple regression analysis was used to investigate the interaction effects of religiosity and general humility on knowledge sharing behaviour (see Appendix D6). Six independent variables were entered into the regression analysis. Table 4.9 presents the summary result of the interaction effect of religiosity and general humility on knowledge sharing behavior. The F test of the regression model showed that there was a strong association between the independent variables and the dependent variable. As shown in Table 4.9, the F test value was ($F = 134.015$, $p < .01$). The power

of the model was explained by its adjusted R^2 value of .387, indicating that 38.7% of the variation in knowledge sharing behaviour was explained by the six independent variables that were entered into the model.

Table 4.9 shows the summary of the regression analysis results of the interaction effects of religiosity and general humility. The association between the religiosity and general humility variable and knowledge sharing behaviour reveals that there was influence by religiosity and general humility as an independent variable on the dependent variable. The positive sign of beta coefficient on (REL*G HUM) suggests that students who are more religious and humble tend to share knowledge with others more often than those who are less religious and less humble.

The highest value of beta coefficient of the independent variables, as shown in Table 4.9, tells which independent variable was having the strongest effect on knowledge sharing behaviour. The strongest effects were from the (REL*INTRUST) variable with standardised beta 0.381 followed by 0.234 for (REL*EHO), 0.200 for (REL*SE), 0.178 for (REL*S HUM), 0.130 for (REL*G HUM), and 0.113 for (REL*REP) respectively.

The result of the interaction effects of religiosity and general humility in Table 4.9 supported the hypothesis **H2F**. Moreover, multicollinearity was not detected in all the regression analyses. The tolerance and VIF values show that they were within the satisfactory level, with tolerance value of more than 0.10 and VIF value less than 10.0 (Hair et al., 2006). In addition, no deviation in the regression analysis occurred such as changing the significance of the independent variables to insignificant, or the appearance of a negative sign on the beta coefficient when the theory proposes a positive relationship between the independent variables and the dependent variables (Grapentine, 1997). This indicates that no effect appeared to violate the estimating

results of the multiple regression. Figure 4.1 shows standardised beta among the interactions effects of REL with non-monetary factors on KSB.

Table 4.9 : Summary Result of the Interaction Effect of REL with Non-Monetary Factors vs. KSB

Predictor Variables	St. Beta	T-value	Collinearity		Adj. R ²	F
			Tolerance	VIF		
REL*EHO	.234	9.322***	.765	1.307	0.388	134.608***
REL*REP	.113	4.439***	.752	1.329	0.385	132.846***
REL*SE	.200	7.725***	.715	1.398	0.391	136.364***
REL*INTRUST	.381	14.961***	.776	1.289	0.363	121.046***
REL*S HUM	.178	6.658***	.674	1.485	0.391	136.637***
REL*G HUM	.130	4.924***	.691	1.447	0.387	134.015***

Dependent Variable: Knowledge Sharing Behaviour, St. = standardised, REL = religiosity, EHO = enjoyment of helping others, REP = reputation, SE = self-efficacy, INTRUST = interpersonal trust, HUM = humility, S = scholar, G = general, *** Significant at $p < 0.01$

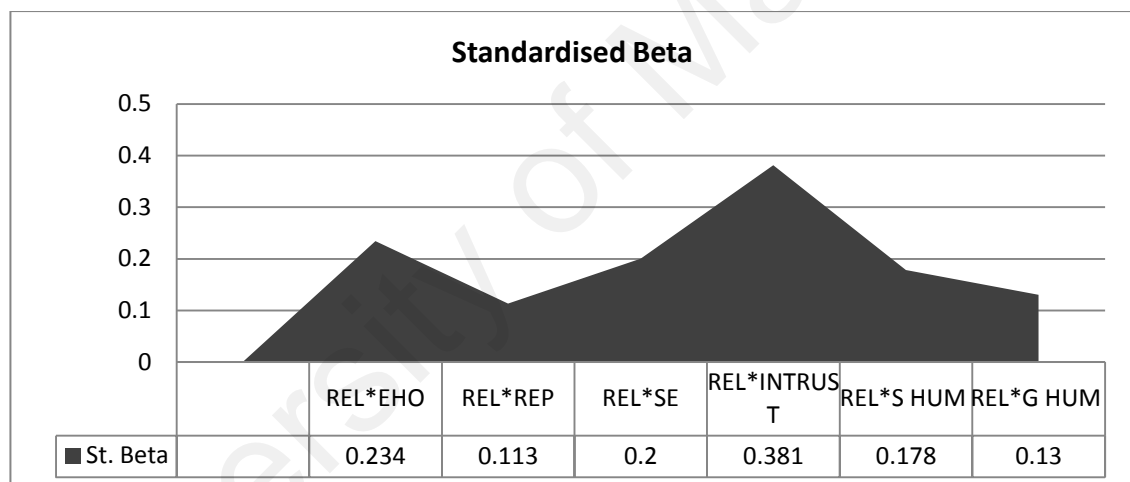


Figure 4.1 Standardised Beta among the Interactions Effects of REL with Non-Monetary Factors on KSB

4.9.3 Testing Research Hypothesis (H3) Related to Ethnic Groups

Hypothesis 3 was formulated for the question pertaining to religiosity among different ethnic groups to moderate the relationship between non-monetary factors and knowledge sharing behaviour. In order to test hypothesis 3, the multiple regression analysis was used to determine the interaction relationship with the dependent variable and to assess their contribution in predicting the dependent variable (KSB). This section of the research shows the summary result of the interaction effects of religiosity and

ethnic groups with the six independent variables of the research model (enjoyment of helping others, reputation, self-efficacy, interpersonal trust, scholar humility, general humility) which were entered into the multiple regression analysis with knowledge sharing behaviour as a dependent variable. The attributes of the regression model that show the interaction effect of religiosity with the ethnic groups are shown in Appendix E. Moreover, ethnic groups are categorical variables involving dummy variables to be used in the regression analysis. In this study, there are four ethnic groups - Malay, Chinese, Indian, and others – which are assigned codes of 1, 2, 3 and 4. The four ethnic groups were coded again and the Malay race was coded as 1, while all the other races were given 0. And when the Chinese race was coded as 1, the other races were coded as 0. When the Indian race was coded as 1, the other races were coded as 0. And when ‘Others’ was given 1, the other races were given 0. Therefore, to create a moderator variable, each non-monetary variable will be multiplied by religiosity and by the ethnic groups that comprise the Malaysian population (Malay, Chinese, Indian and Others) respectively. As a result, the new moderator variables were created to be used in this part of the analysis.

Twenty four models were investigated to test hypothesis 3 related to ethnicity, which consist of four groups and the six non-monetary factors with knowledge sharing behaviour. Each model included six independent variables (enjoyment of helping others, reputation, self-efficacy, interpersonal trust, scholar humility and general humility) plus one interaction variable. As mentioned earlier in section 4.6.6 in the interaction analysis, multicollinearity might arise for the high intercorrelation among the variables. Therefore, if any variable shows high intercorrelation and multicollinearity emerged; that variable will be dropped from the regression model (Pallant, 2007). It is observed that religiosity was highly intercorrelated with the interaction variables with value of

more than .70. Therefore, religiosity was removed from all models to obtain acceptable statistical results.

4.9.3.1 Interaction Effect of REL*Non-Monetary Factors*Malay Ethnic

The summary of results of the interaction effects of religiosity with non-monetary factors and the Malay ethnic group on knowledge sharing behaviour was examined (refer to Appendix E) for more details. The following Table 4.10 shows the summary of the regression models that was used to examine the hypotheses H3.

The first model of the interaction effects of religiosity with the enjoyment of helping others and the Malay ethnic group on knowledge sharing behavior was investigated with the regression analysis (see Appendix E1). The summary results showed that the overall F-test of the regression model was significant ($F = 519.276$, $p < .01$) as seen in Table 4.10. The result of the first regression model shows the adjusted R^2 value was .391 which reveals the explanatory power of the regression model, suggesting that 39.1% of the variance in the knowledge sharing behaviour was explained by the seven predictor variables, and that knowledge sharing behaviour was significantly related to REL *EHO*M ($\beta = .119$, $t = 10.949$, $p < .01$). The moderator variable (REL *EHO*M) was found positively related to knowledge sharing behaviour, implying that Malay respondents who were religious and enjoyed helping others regularly shared their knowledge. This result supports the hypothesis (**H3Me1**). The hypothesis says:

H3Me1 Malays with religiosity, positively moderate the relationship between the enjoyment of helping others and knowledge sharing behavior.

In summary, the first regression model of the interaction effects of religiosity with the enjoyment of helping others and the Malay ethnic group reveals that the result supported the hypothesis.

The second multiple regression analysis for the second model was used to examine the interaction effect of religiosity with reputation and the Malay ethnic group on knowledge sharing behaviour (see Appendix E2). A total of seven independent variables (EHO, REP, SE, INTRUST, S HUM, G HUM, RE*REP*M) were entered in the regression analysis with the dependent variable knowledge sharing behavior, all at once. The regression model was found significant and the overall F-test was ($F = 517.767, p < .01$). The adjusted coefficient of determination (adjusted R^2) shows the explanatory power of the regression model. The adjusted R^2 value was .391 indicating that the predictor variables were able to explain 39.1% of the variation on the dependent variable.

The summary result of the regression analysis in Table 4.10 reveals that knowledge sharing behaviour was significantly related to REL*REP*M ($\beta = .115, t = 10.646, p < .01$). The positive sign of the beta coefficient on the moderator variable (REL*REP*M) showed that Malay respondents who cared about personal reputation and were religious had a propensity to share their knowledge frequently. This result supports the hypothesis number:

H3Me2 Malays with religiosity, positively moderate the relationship between reputation and knowledge sharing behavior.

In conclusion, the second model of multiple regression analysis reveals that the result was constant with the suggested hypothesis.

The third interaction effect of religiosity among Malays on the relationship between self-efficacy and knowledge sharing behaviour was investigated by the multiple regression analysis (see Appendix E3).

As seen in Table 4.10, the summary result shows the overall F-test of the third regression model was significant ($F = 518.335, p < .01$) and the predictor variables

together explained a part of the variation in the dependent variable. The adjusted R^2 value for the third model was .391 which revealed the explanatory power of the regression model, suggesting that 39.1% of the variance in the knowledge sharing behaviour was explained by the seven predictor variables.

Table 4.10 showed the summary of the third regression model and demonstrated that knowledge sharing behaviour was significantly related to REL*SE*M ($\beta = .116$, $t = 10.761$, $p < 0.1$). The moderator variable (REL*SE*M) was found positively related to knowledge sharing behaviour, implying that Malay respondents who have self-confidence and religiosity are constant in their knowledge sharing. Thus, hypothesis **H3Me3** was supported.

H3Me3 Malays with religiosity, positively moderate the relationship between self-efficacy and knowledge sharing behavior.

In conclusion, the above result of the regression model reveals that the interaction effect of the moderating variable (REL*SE*M) on the relationship between self-efficacy and knowledge sharing behavior was supported.

The fourth model examines the interaction of religiosity with interpersonal trust and the Malay ethnic group. Seven independent variables (EHO, REP, SE, INTRUST, SHUM, G HUM, REL*INTRUST*MALAY) were entered in the regression analysis with the dependent variable knowledge sharing behavior, all at once (see Appendix E4).

Table 4.10 shows the overall F-test of the model was found significant ($F = 515.655$, $p < 0.01$). The adjusted coefficient of determination (adjusted R^2) demonstrated the explanatory power of the regression model. The adjusted R^2 value was .390 which indicates that 39.0 % of the variation on knowledge sharing behaviour was accounted for by the predictor variables.

Table 4.10 shows the summary result of the fourth regression analysis and reveals that knowledge sharing behaviour was positively related to REL*INTRUST*M ($\beta = .113$, $t = 10.206$, $p < .01$) implying that Malay respondents who have good intention toward each other and possess religiosity frequently share their knowledge. This result supports the hypothesis:

H3Me4 Malays with religiosity, positively moderate the relationship between interpersonal trust and knowledge sharing behavior.

In summary, the result of the multiple regression analysis reveals that the interaction effect of the moderating variables (REL*INTRUST*M) on knowledge sharing behaviour was significant, and that the hypothesis was supported.

The fifth regression model investigates the interaction effect of the moderating variable (REL*S HUM*M) on knowledge sharing behaviour as a dependent variable (see Appendix E5). Table 4.10 shows the summary of the fifth regression model which indicates that the overall F-test of the fifth regression model was significant ($F = 519.912$, $p < 0.01$) and the predictor variables together explained a portion of the variation in the dependent variable. The adjusted R^2 value was .392 suggesting that the explanatory power of the regression model explained 39.2% of the variation in the dependent variable, accounted for by the seven predictor variables.

The beta coefficient of the moderating variable REL*S HUM*M ($\beta = .121$, $t = 11.075$, $p < 0.01$) indicates a positive relationship with knowledge sharing behaviour. The positive sign on (REL*S HUM*M) implies that Malay respondents who are humble and religious are regularly sharing their knowledge with colleagues. This result reveals that hypothesis **H3Me5** is supported.

H3Me5 Malays with religiosity, positively moderate the relationship between scholar humility and knowledge sharing behavior.

In conclusion, the above result of the fifth model of multiple regression analysis pertaining to the interaction effect of religiosity and the Malay ethnic group on the relationship between scholar humility and knowledge sharing behaviour supports the hypothesis (**H3Me5**).

The sixth regression model pertaining the interaction effects of the moderating variable religiosity with the Malay ethnic group on the relationship between general humility and knowledge sharing behaviour was examined by multiple regression (see Appendix E6). Seven predictor variables were used in the six multiple regression analysis (EHO, REP, SE, INTRUST, S HUM, G HUM, REL*G HUM*M) to predict the dependent variable knowledge sharing behavior. The predictor variables were entered into the regression analysis together with the dependent variable, all at once.

Table 4.10 shows the summary result of the sixth regression model. The overall F-test of the model was significant ($F = 516.319, p < 0.01$) and the predictor variables together explained a part of the variation in the dependent variable. The adjusted R^2 value was .390 revealing the explanatory power of the regression model, suggesting that 39.0% of the variance in the knowledge sharing behaviour were explained by the seven predictor variables. Knowledge sharing behaviour was significantly related to REL*G HUM*M ($\beta = .112, t = 10.346, p < 0.01$).

The interaction of the moderator variable religiosity with the Malay ethnic group and general humility was found positively related to knowledge sharing behaviour, implying that Malay respondents who are perceived humble with religiosity regularly share their knowledge with peers. The result supports the hypothesis **H3Me6**. This result supports hypothesis **H3Me6** that proposes:

H3Me6 Malays with religiosity, positively moderate the relationship between general humility and knowledge sharing behavior.

In conclusion, the above result of the sixth multiple regression analysis pertaining to the interaction effect of the moderating variable religiosity with Malays on the relationship between general humility and knowledge sharing behaviour indicates that Malays who are humble and possess the virtue of religiosity tend to share their knowledge frequently with colleagues.

In all the six regression models, no multicollinearity was found as seen in Table 4.10. All tolerance values and variance inflation factors values (VIF) were not violated, as the common cut-off threshold of the tolerance value is not less than .10 and to VIF value, not more than 10.0 (Hair et al., 2006).

The importance of the independent variables in the regression models were indicated by their beta coefficient value. The highest beta coefficient was by REL*S HUM*MALAY (.121), followed by REL*EHO*MALAY (.119), REL*SE*MALAY (.116), and REL*REP*MALAY (.115), REL*INTRUST*MALAY (.113) and REL*G HUM*MALAY (.112) respectively. Figure 4.2 shows the standardize beta among the interaction effects of REL with non-monetary factors and Malay ethnic groups on KSB.

Table 4.10 : Summary Result of the Interaction Effect of REL with Non-Monetary Factors and Malay Ethnic Group vs. KSB

Predictor Variables	St. Beta	T-value	Collinearity S.		Adj. R ²	F
			Tolerance	VIF		
REL*EHO*M	.119	10.949***	.908	1.102	.391	519.276***
REL*REP*M	.115	10.646***	.929	1.077	.391	517.767***
REL*SE*M	.116	10.761***	.926	1.079	.391	518.335***
REL*INTRUST*M	.113	10.206***	.888	1.126	.390	515.655***
REL*S HUM*M	.121	11.075***	.908	1.101	.392	519.912***
REL*G HUM*M	.112	10.436***	.919	1.089	.390	516.319***

Dependent Variable KSB = knowledge sharing behaviour, St. = standardised, REL = religiosity, EHO = enjoyment of helping others, REP = reputation, SE = self-efficacy, INTRUST = interpersonal trust, S HUM = scholar humility, G HUM = general humility, M = Malay, S = statistics, *** significant at p < .01.

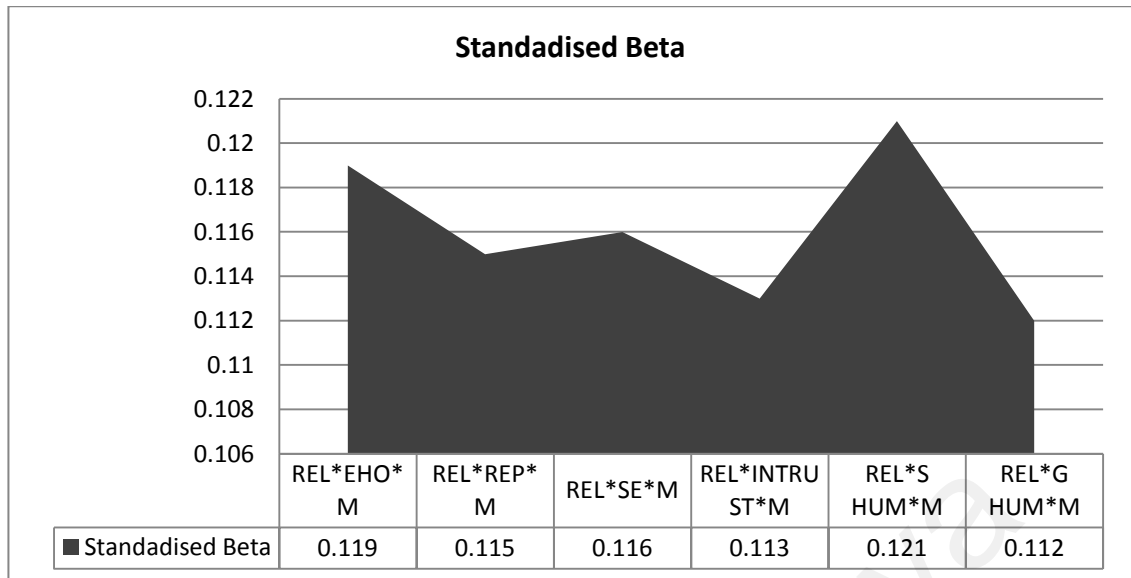


Figure 4.2 Standardised Beta among the Interactions Effects of REL with Non-Monetary Factors and Malay Ethnic Group on KSB

4.9.3.2 Interaction Effect of REL*Non-Monetary Factors*Chinese Ethnic

This part of the research showed the summary result of the interaction effect of the moderating variables (REL*Non-monetary Factor*Chinese Ethnic groups) on knowledge sharing behaviour and was investigated by six multiple regression models. The regression models that show the interaction effect of religiosity with the Chinese ethnic group are shown in detail in Appendix E7 to E12.

The result of the first regression model is demonstrated in detail in Appendix E7. The summary result of the interaction effects of religiosity with the enjoyment of helping others and the Chinese ethnic group on knowledge sharing behavior is represented in Table 4.11. The result indicates that the overall F-test of the regression model was significant ($F = 491.930$, $p < 0.01$) and the predictor variables together explained a portion of the variation in the dependent variable. The adjusted R^2 value was .379 suggesting that the explanatory power of the regression model shows that 37.9% of the variation in the dependent variable was accounted for by the eight predictor variables.

As reported in Table 4.11, the knowledge sharing behaviour was not significant and negatively related to REL*EHO*Chinese (β -.011, t = -1.035, p > 0.1)

The non-significant effect of the moderating variable REL*EHO*Chinese on the relationship between reputation and knowledge sharing behaviour leads to the rejection of the hypothesis **H3Ce1**, that assumes religiosity and the Chinese ethnic group moderates negatively the relationship between the enjoyment of helping others and knowledge sharing behavior, because not enough evidence was found. This result did not support hypothesis **H3Ce1** which states that:

H3Ce1 Chinese with religiosity, positively moderate the relationship between the enjoyment of helping others and knowledge sharing behavior.

In conclusion, the above result of the multiple regression analysis pertaining to the interaction effect of the variable REL*EHO*CHINESE on knowledge sharing behaviour indicates that there was no significant effect of moderating variable on knowledge sharing behavior, which leads to the rejection of the hypothesis **H3Ce1**.

The second model of the multiple regression analysis was conducted to analyse the relationship between (REL*REP*CHINESE) and knowledge sharing behaviour. A total of seven independent variables (EHO, REP, SE, INTRUST, S HUM, G HUM, RE*REP*CHINESE) were entered in the regression analysis, all at once, with the dependent variable knowledge sharing behavior (see Appendix E8).

The regression model was found significant and the overall F-test was (F = 491.917, p < 0.01). The adjusted coefficient of determination (adjusted R^2) shows the explanatory power of the regression model. The adjusted R^2 value was .379, which indicates that the predictor variables were able to explain 37.9 % of the variation on the dependent variable.

Table 4.11 shows the result of the regression analysis. Knowledge sharing behaviour was found not significant and negatively related to REL*REP*CHINESE ($\beta = .011$, $t = -1.099$, $p > 0.1$). As a result, the null hypothesis was accepted, indicating that there is no relationship between REL*REP*Chinese and knowledge sharing behavior. Therefore, the result does not support hypothesis **H3Ce2**.

H3Ce2 Chinese with religiosity, positively moderate the relationship between reputation and knowledge sharing behavior.

In conclusion, the result indicated that the moderator variable REL*REP*Chinese was found with a negative sign and not significantly related to knowledge sharing behavior, which indicates that there was not enough evidence to support this hypothesis.

The third multiple regression analysis was employed to examine the interaction effects of religiosity with self-efficacy and the Chinese ethnic group in Malaysia REL*SE*CHINESE on knowledge sharing behaviour. Seven independent variables (EHO, REP, SE, INTRUST, S HUM, G HUM and REL*SE*CHINESE) were entered into the regression analysis, all at once, with the dependent variable knowledge sharing (see Appendix E9).

The summary result of the third model is shown in Table 4.11. The F-test was found significant ($F = 491.733$, $p < 0.01$). The adjusted coefficient of determination (adjusted R^2) showed the explanatory power of the regression model. The adjusted R^2 value was .379, which indicated that 37.9 % of the variation on knowledge sharing behaviour was explained by the predictor variables.

The result of the regression analysis reveals that the moderator variable REL*SE*CHINESE was not significant to knowledge sharing behavior with a negative sign ($\beta = -.005$, $t = -0.466$, $p > 0.1$). Along this line, the null hypothesis was accepted

indicating that there is no relationship between knowledge sharing behavior and REL*SE*CHINESE. Therefore, the hypothesis **H3Ce3** was not supported.

H3Ce3 Chinese with religiosity, positively moderate the relationship between self-efficacy and knowledge sharing behavior.

To conclude, the above result of the multiple regression analysis model three reveals that there was not enough evidence of a significant effect to support the relationship between REL*SE*CHINESE and knowledge sharing behavior.

The fourth model of multiple regression analysis was used to investigate the interaction effects of REL*INTRUST*CHINESE on knowledge sharing behaviour. A total of seven independent variables (EHO, REP, SE, INTRUST, S HUM, G HUM, REL*INTRUST*CHINESE) were entered into the regression analysis, all at once, with knowledge sharing behavior as a dependent variable (see Appendix E10). The regression model was found significant, as seen in Table 4.11, and the overall F-test was ($F = 491.845, p < 0.01$). The adjusted coefficient of determination (adjusted R^2) shows the explanatory power of the regression model. The adjusted R^2 value was .379 indicating that the predictor variables were able to explain 37.9 % of the variation on the dependent variable.

The beta coefficient sign was negative on REL*INTRUST*CHINESE and the value was insignificant ($\beta = -0.009, t = -.838, p > 0.1$) indicating that there was no significant relationship between knowledge sharing behavior and the moderator variable REL*INTRUST*CHINESE. Therefore, the null hypothesis was accepted and hence, hypothesis **H3Ce4** was not supported.

H4Ce4 Chinese with religiosity, positively moderate the relationship between interpersonal trust and knowledge sharing behavior.

To conclude the above result of the multiple regression analysis, the interaction effect of the REL*INTRUST*CHINESE on knowledge sharing behaviour was not significant, due to the lack of evidence supporting the relationship.

In order to examine the interaction effects of REL*S HUM*CHINESE on knowledge sharing behaviour, a total of seven independent variables EHO, REP, SE, INTRUST, S HUM, G HUM, REL*S HUM*CHINESE were entered into the regression analysis with knowledge sharing behavior, all at once (see Appendix E11). Table 4.9 represents the summary result of the interaction effects of religiosity with scholar humility and the Chinese ethnic group on knowledge sharing behavior. The overall F-test of the regression model was significant ($F = 491.928$, $p < 0.01$) and the predictor variables together explained a portion of the variation in the dependent variable. The adjusted R^2 value was .379 suggesting that the explanatory power of the regression model shows that 37.9% of the variation in the dependent variable was accounted for by the seven predictor variables.

As reported in Table 4.11, knowledge sharing behaviour was not significant and negatively related to REL*S HUM*Chinese. The non-significant effect of the moderating variable REL*S HUM*Chinese on the relationship between scholar humility and knowledge sharing behaviour leads to the acceptance of the null hypothesis that assumes there is no relationship between knowledge sharing behaviour and REL*S HUM*Chinese. Therefore, the result does not support hypothesis **H3Ce5**.

H3Ce5 Chinese with religiosity, positively moderate the relationship between scholar humility and knowledge sharing behavior.

In conclusion, the above result of the multiple regression analysis pertaining to the interaction effect of the variable REL*S HUM*CHINESE on knowledge sharing behaviour indicates that there was no significant effect of the moderating variable on

knowledge sharing behavior because not enough evidence was found to support the relationship.

The sixth model of the multiple regression analysis was run to examine the interaction effects of religiosity with general humility and the Chinese ethnic group (REL*G HUM*CHINESE) on knowledge sharing behaviour (see Appendix E12). A total of seven independent variables (EHO, REP, SE, INTRUST, S HUM, H UMG and REL*G HUM*CHINESE) were entered in the regression analysis with the dependent variable, all at once.

The regression model was found significant, as seen in Table 4.11, and the overall F-test was ($F = 491.972, p < 0.01$). The adjusted coefficient of determination (adjusted R^2) shows the explanatory power of the regression model. The adjusted R^2 value was .379 indicating that the predictor variables were able to explain 37.9 % of the variation on the dependent variable.

The result of the regression analysis in Table 4.11 reveals that the knowledge sharing behaviour was not significantly related to REL*G HUM*CHINESE with a negative sign ($\beta = -0.012, t = -1.120, p > 0.1$).

The insignificant effect of the moderator variable REL*G HUM*CHINESE on knowledge sharing behavior leads to the rejection of hypothesis **H3Ce6** and does not support it. The hypothesis presumes that:

H3Ce6 Chinese with religiosity, positively moderate the relationship between general humility and knowledge sharing behavior. Figure 4.3 shows the standardised beta among the interactions effects of REL with non-monetary factors and Chinese ethnic groups on KSB.

Table 4.11 : Summary Result of the Interaction Effect of REL with Non-Monetary Factors and Chinese Ethnic Group vs. KSB

Predictor Variables	St. Beta	T-value	Collinearity S.		Adj. R ²	F
			Tolerance	VIF		
REL*EHO*C	-.100	-1.035	.994	1.006	0.379	491.930***
REL*REP*C	-.011	-1.009	.994	1.006	0.379	491.917***
REL*SE*C	-.005	-0.466	.993	1.008	0.379	491.733***
REL*INTRUST*C	-.009	-0.838	.991	1.009	0.379	491.845***
REL*S HUM*C	-.011	-1.31	.988	1.012	0.379	491.928***
REL*G HUM*C	-.012	-1.120	.991	1.009	0.379	491.972***

Dependent Variable KSB = knowledge sharing behaviour, St = standardised, REL = religiosity, EHO = enjoyment of helping others, REP = reputation, SE = self-efficacy, INTRUST = interpersonal trust, S HUM = scholar humility, G HUM = general humility, C = Chinese, S = statistics, *** significant at $p < .01$.

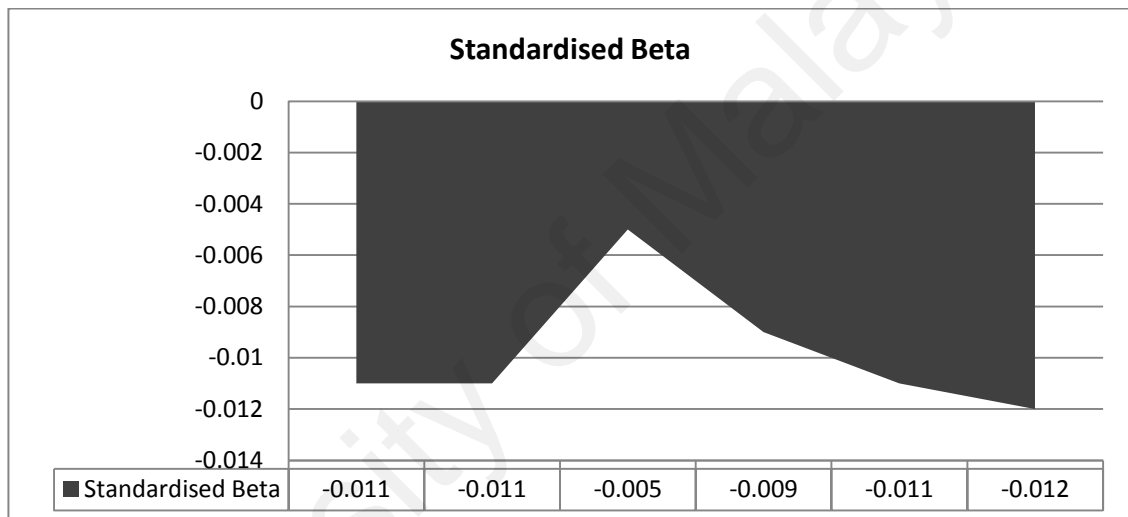


Figure 4.3 Standardised Beta among the Interactions Effects of REL with Non-Monetary Factors and Chinese Ethnic Group on KSB

In summary, the result of the sixth model of the regression analysis regarding the interaction effects of religiosity with general humility and the Chinese ethnic group on knowledge sharing behavior shows that the result was insignificant, which leads to hypothesis H3Ce6 not being supported.

4.9.3.3 Interaction Effect of REL*Non-Monetary Factors*Indian Ethnic

The multiple regression analysis was employed to examine the interaction effect of religiosity with non-monetary factors and the Indian ethnic group (REL*Non-monetary Factors* Indian ethnic group) on knowledge sharing behavior (see Appendix

E13 to E18). Six models were used to find out the effects of moderator variables with each non-monetary factor. The following Table 4.12 demonstrates the summary result of the six models respectively.

The first model represents religiosity with the Indian ethnic group and the enjoyment of helping others to predict knowledge sharing behavior. Seven predictor variables were entered into the first multiple regression analysis (EHO, REP, SE, INTRUST, S HUM, G HUM, REL*EHO*INDIAN) and knowledge sharing behavior as a dependent variable, all at once (see Appendix E13). Table 4.12 shows that the overall F-test of the first regression model was significant ($F = 495.519$, $p < 0.01$) and the predictor variables together explained a part from the variation in the dependent variable.

The adjusted R^2 value was .380 which reveals the explanatory power of the regression model, suggesting that 38.0% of the variance in the knowledge sharing behaviour was explained by the eight predictor variables. Table 4.12 shows that knowledge sharing behaviour was significantly related to REL*EHO*INDIAN ($\beta = .043$, $t = 4.082$, $p < 0.01$).

The moderator variable (REL*EHO*INDIAN) was found positively related to knowledge sharing behaviour, implying that Indian respondents who enjoy helping others and possess a religiosity virtue are frequently sharing their knowledge. This result supported the hypothesis **H3Ie1**.

H3Ie1 Indians with religiosity, positively moderate the relationship between the enjoyment of helping others and knowledge sharing behavior.

In conclusion, the above result of the multiple regression analysis pertaining to the interaction effect of the moderator variables (REL*EHO*INDIAN) on knowledge sharing behavior was supported.

The second model of multiple regression analysis was run to examine the interaction effect of religiosity with reputation and the Indian Ethnic group (REL*REP*INDIAN) on knowledge sharing behaviour. A total of seven independent variables (EHO, REP, SE, INTRUST, SHUM, HUMG, REL*REP*INDIAN) were entered into the regression analysis with the dependent variable, all at once (see Appendix E14).

The regression model was found significant, as seen in Table 4.120, and the overall F-test was ($F = 495.141, p < 0.01$). The adjusted coefficient of determination (adjusted R^2) shows the explanatory power of the regression model. The adjusted R^2 value was .380 indicating that the predictor variables were able to explain 38.0 % of the variation on the dependent variable.

The summary result of the regression analysis in Table 4.12 reveals that knowledge sharing behaviour was positive and significantly related to REL*REP*INDIAN ($\beta = .041, t = 3.876, p < 0.01$).

The positive sign of beta coefficient on the moderator variable (REL*REP*INDIAN) indicates that Indians who are religious and allocate a great importance to reputation tend to share their knowledge frequently with colleagues. This result supported hypothesis **H3Ie2**.

H3Ie2 Indians with religiosity, positively moderate the relationship between reputation and knowledge sharing behavior.

In summary, the result of the second model of the regression analysis regarding the interaction effect of religiosity with reputation and the Indian ethnic group on knowledge sharing behavior shows that the suggested hypotheses **H3Ie2** was supported.

The third interaction effect of the moderator variable religiosity and the Indian ethnic group on the relationship between self-efficacy and knowledge sharing behaviour will be examined by the multiple regression analysis. In the third regression model, seven independent variables were entered all at once into the multiple regression analysis (EHO, REP, SE, INTRUST, S HUM, G HUM, REL*SE*INDIAN) to predict the dependent variable knowledge sharing behavior (see Appendix E15).

Table 4.12 shows that the overall F-test of the regression model was significant ($F = 495.210$, $p < 0.01$) and the predictor variables together explained a part of the variation in the dependent variable. The adjusted R^2 value was .380 revealing the explanatory power of the regression model, suggesting that 38.0% of the variance in the knowledge sharing behaviour was explained by the seven predictor variables.

Table 4.12 demonstrated that knowledge sharing behaviour was significantly related to REL*SE*INDIAN ($\beta = .041$, $t = 3.915$, $p < 0.1$). The positive sign of beta coefficient on the moderator variable REL*SE*INDIAN shows that Indian respondents who are self-confident and religious are often sharing knowledge with colleagues. Therefore, hypothesis **H3Ie3** was supported.

H3Ie3 Indians with religiosity, positively moderate the relationship between self-efficacy and knowledge sharing behavior.

In conclusion, the result of the third model of multiple regression analysis related to the interaction effect of religiosity with the Indian ethnic group on the relationship between self-efficacy and knowledge sharing behavior, supports hypothesis **H3Ie3**.

The fourth model of multiple regression analysis was used to investigate the interaction effect of religiosity with the Indian ethnic group on the relationship between interpersonal trust and knowledge sharing behaviour. Seven independent variables

(EHO, REP, SE, INTRUST, S HUM, G HUM, REL*INTRUST*INDIAN) were entered in the regression analysis together with the dependent variable knowledge sharing behavior, all at once (see Appendix E16).

The overall F-test of the fourth model was found significant ($F = 494.892$, $p < 0.01$) as illustrated in Table 4.12. The adjusted coefficient of determination (adjusted R^2) shows the explanatory power of the regression model. The adjusted R^2 value was .380 indicating that 38.0 % of the variation on knowledge sharing behaviour was accounted for by the predictor variables.

Table 4.12 shows the result of the fourth model of the regression analysis and reveals that knowledge sharing behaviour was significantly related to REL*INTRUST*INDIAN ($\beta = .039$, $t = 3.734$, $p < 0.01$).

The positive sign of beta coefficient indicates that Indians, who have good intention toward each other and have religiosity, tend to share their knowledge frequently. This result supports hypothesis **H3Ie4**.

H3Ie4 Indians with religiosity, positively moderate the relationship between interpersonal trust and knowledge sharing behavior.

In conclusion, the result of the regression analysis in relation to the interaction effect of REL*INTRUST*INDIAN on knowledge sharing behavior supports hypothesis **H3Ie4**.

The fifth interaction effect of religiosity and the Indian ethnic group on the relationship between scholar humility and knowledge sharing behaviour will be investigated by the multiple regression analysis. Seven predictor variables were utilised in the multiple regression analysis (EHO, REP, SE, INTRUST, S HUM, G HUM, REL*S HUM*INDIAN) to predict the dependent variable knowledge sharing behavior.

All the predictor variables were entered into the regression analysis together with the dependent variable, all at once (see Appendix E17).

Table 4.12 indicates that the overall F-test of the fifth regression model was significant ($F = 494.381$, $p < 0.01$) and the predictor variables together explained a portion of the variation in the dependent variable. The adjusted R^2 value was .380 suggesting that the explanatory power of the regression model explained 38.0% of the variation in the dependent variable accounted for by the seven predictor variables.

The result showed that knowledge sharing behaviour was significantly related to REL*S HUM*INDIAN ($\beta = .036$, $t = 3.424$, $p < 0.01$).

The positive sign of the moderating variable REL*S HUM*INDIAN indicates that Indian respondents who are humble and religious are regularly sharing their knowledge with other colleagues. This result reveals that hypothesis **H3Ie5** is supported.

H3Ie5 Indians with religiosity, positively moderate the relationship between scholar humility and knowledge sharing behavior.

In conclusion, the above result of the fifth model of multiple regression analysis pertaining to the interaction effect of religiosity and the Indian ethnic group on the relationship between scholar humility and knowledge sharing behaviour supports the hypothesis **H3Ie5**.

The sixth interaction effect of the moderator variable religiosity with the Indian ethnic group on the relationship between general humility and knowledge sharing behaviour was examined by multiple regression analysis. Seven predictor variables were used in the sixth multiple regression analysis (EHO, REP, SE, INTRUST, S HUM, G HUM, REL*G HUM*INDIAN) to predict the dependent variable knowledge sharing

behavior. All the predictor variables were entered into the regression analysis together with the dependent variable, all at once (see Appendix E18).

Table 4.12 shows that the overall F-test of the sixth regression model was significant ($F = 495.428$, $p < 0.01$) and the predictor variables together explained a part of the variation in the dependent variable. The adjusted R^2 value was .380 revealing the explanatory power of the regression model, suggesting that 38.0% of the variance in the knowledge sharing behaviour was explained by the seven predictor variables. The knowledge sharing behaviour was significantly related to REL*G HUM*INDIAN ($\beta = .043$, $t = 4.034$, $p < 0.01$).

The interaction of the moderator variable of religiosity with the Indian ethnic group and general humility was found positively related to knowledge sharing behaviour, implying that Indian respondents who were perceived humble and have religiosity are regular in their knowledge sharing with colleagues. The result supports hypothesis **H3Ie6**. Figure 4.4 shows the standardised beta among the interactions effects of REL with non-monetary factors and Indian ethnic groups on KSB.

H3Ie6 Indians with religiosity, positively moderate the relationship between general humility and knowledge sharing behavior.

Table 4.12 : Summary Result of the Interaction Effect of REL with Non-Monetary Factors and the Indian Ethnic Group vs. KSB

Predictor Variables	St. Beta	T-value	Collinearity Statistics		Adj. R^2	F
			Tolerance	VIF		
REL*EHO*I	.043	4.082***	.994	1.006	.380	495.519***
REL*REP*I	.041	3.876***	.989	1.011	.380	495.141***
REL*SE*I	.041	3.915***	.991	1.009	.380	495.210***
REL*INTRUST*I	.039	3.734***	.992	1.008	.380	494.892***
REL*S HUM*I	.036	3.424***	.992	1.008	.380	494.381***
REL*G HUM*I	.043	4.034***	.990	1.010	.380	494.428***

Dependent Variable KSB = knowledge sharing behaviour, St = standardised, REL = religiosity, EHO = enjoyment of helping others, REP = reputation, SE = self-efficacy, INTRUST = interpersonal trust, S HUM = scholar humility, G HUM = general humility, I = Indian, *** significant at $p < .01$.

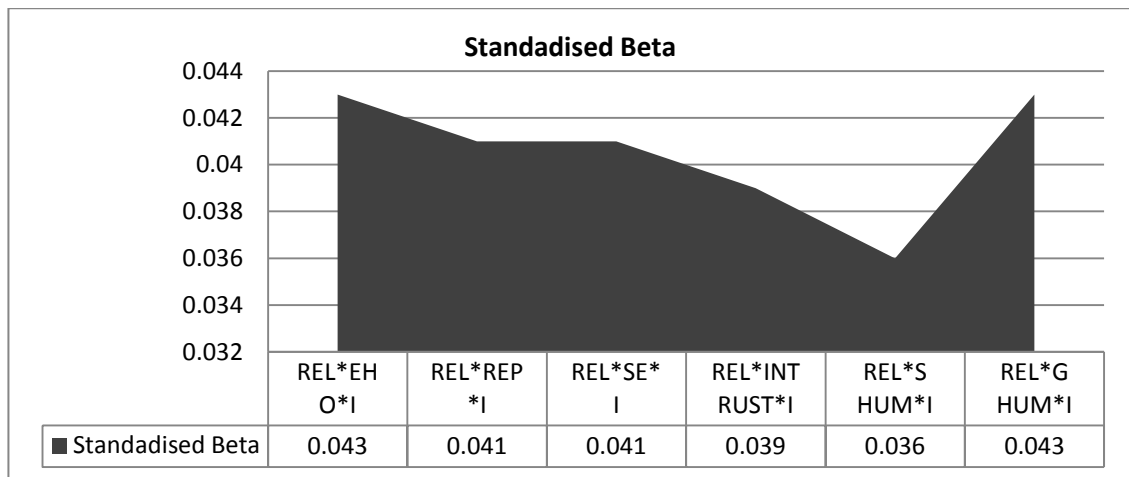


Figure 4.4 Standardised Beta among the Interactions Effects of REL with Non-Monetary Factors and Indian Ethnic Group on KSB

In conclusion, the above result of the multiple regression analysis pertaining to the interaction effect of the moderator variables religiosity with the Indian ethnic group on the relationship between humility and knowledge sharing behaviour supports hypothesis **H3Ie6**.

4.9.3.4 Interaction Effect of REL*Non-Monetary Factors*Others Ethnic

This part of the research will examine the interaction effect of religiosity with non-monetary factors and the 'Others' ethnic group on the knowledge sharing behavior, by using six multiple regression models. Each model consists of one moderator variable and six independent variables (see Appendix E19 to E24). Seven predictor variables were entered into the multiple regression analysis (EHO, REP, SE, INTRUST, S HUM, G HUM, REL*EHO*OTHERS) to predict the dependent variable knowledge sharing behavior. All the predictor variables were entered into the regression analysis together with the dependent variable, all at once (see Appendix E19). Table 4.13 shows the summary results of the six regression models.

The interaction effect of the first regression model shows that the overall F-test of the model was significant ($F = 491.808$, $p < 0.01$) and the predictor variables together explained a part of the variation in the dependent variable. The adjusted R^2 value was

.379 revealing the explanatory power of the regression model, suggesting that 37.9% of the variance in the knowledge sharing behaviour were explained by the seven predictor variables.

Table 4.13 shows that knowledge sharing behaviour was not significantly related to REL*EHO*OTHERS ($\beta = .008$, $t = 0.737$, $p > 0.1$).

In the first model, the beta coefficient of the variable REL*EHO*OTHERS was found with a positive sign but was not significant, indicating that there was not enough evidence of a significant effect on knowledge sharing behavior, which led to the rejection of the hypothesis **H3Oe1**. Therefore, the result does not support hypothesis **H3Oe1**.

H3Oe1 Others with religiosity, positively moderate the relationship between the enjoyment of helping others and knowledge sharing behaviour.

In conclusion, the above result of the first multiple regression analysis pertaining to the interaction effect of the moderating variable religiosity with the 'Others' ethnic group on the relationship between the enjoyment of helping others and knowledge sharing behavior was insignificant and thus, hypothesis **H3Oe1** is not supported.

The second model of multiple regression analysis was used to investigate the interaction effects of REL*REP*OTHORS on knowledge sharing behaviour. A total of seven independent variables (EHO, REP, SE, INTRUST, S HUM, G HUM, REL*H*REP*OTHERS) were entered in the regression analysis with knowledge sharing behavior as a dependent variable, all at once (see Appendix E20). The regression model was found significant, as seen in Table 4.13, and the overall F-test was ($F = 491.898$, $p < 0.01$). The adjusted coefficient of determination (adjusted R^2) shows the explanatory power of the regression model. The adjusted R^2 value of .379 indicates

that the predictor variables were able to explain 37.9 % of the variation on the dependent variable.

The moderator variable (REL*REP*OTHERS) was found not significantly related to knowledge sharing behavior ($\beta = .010$, $t = 0.967$ $p > 0.1$) implying that hypothesis **H3Oe2** was rejected. As a result, the hypothesis **H3Oe2** is not supported. The insignificance indicates that the null hypothesis was accepted, which means that there was not enough evidence of a relationship between the moderator variable REL*REP*OTHERS and knowledge sharing behavior. The hypothesis was:

H3Oe2 Others with religiosity, positively moderate the relationship between reputation and knowledge sharing behaviour.

In summary, the above result of the multiple regression analysis reveals that the interaction effect of REL*REP*OTHERS on knowledge sharing behaviour, was not significant.

The third interaction effect of the moderator variable religiosity with the Others ethnic group on the relationship between self-efficacy and knowledge sharing behaviour will be inspected by the third model of the multiple regression analysis. Seven independent variables were entered into the multiple regression analysis (EHO, REP, SE, INTRUST, S HUM, G HUM, REL*SE*OTHERS) to predict the dependent variable knowledge sharing behavior. The seven predictor variables were entered into the regression analysis together with the dependent variable, all at once (see Appendix E21).

Table 4.13 illustrates that the overall F-test of the third regression model was significant ($F = 491.995$, $p < 0.01$) and the predictor variables together explained a part of the variation in the dependent variable. The adjusted R^2 value was .379 which reveals

the explanatory power of the regression model, suggesting that 37.9% of the variance in the knowledge sharing behaviour was explained by the seven predictor variables.

The interaction effect of the moderator variable RE*SE*OTHERS was found not significantly relating to knowledge sharing behavior ($\beta = .012$, $t = 1.164$ $p > 0.1$) implying that hypothesis **H3Oe3** was rejected. Thus, the hypothesis was not supported. The insignificance of the moderator variable indicates that there was not enough evidence to support the proposed relationship between REL*SE*OTHERS and knowledge sharing behavior. The hypothesis was:

H3Oe3 Others with religiosity, positively moderate the relationship between self-efficacy and knowledge sharing behaviour.

In conclusion, the result of the third model of multiple regression analysis relates to the interaction effect of the moderator variables REL*SE*OTHERS on knowledge sharing behaviour shows that hypotheses **H3Oe3** was not supported.

The fourth model of the multiple regression analysis was employed to investigate the interaction effects of the moderator variables REL*OTHERS on the relationship between interpersonal trust and knowledge sharing behaviour. Seven independent variables (EHO, REP, SE, INTRUST, S HUM, G HUM and REL*INTRUST*OTHERS) were entered into the regression analysis together with the dependent variable knowledge sharing behavior, all at once (see Appendix E22).

Table 4.13 shows the result of the fourth regression analysis. The overall F-test was found significant ($F = 491.811$, $p < 0.01$). The adjusted coefficient of determination (adjusted R^2) demonstrated the explanatory power of the regression model. The adjusted R^2 value was .379 which indicates that 37.9% of the variation on knowledge sharing behaviour was accounted for by the predictor variables.

Table 4.13 shows the result of the regression analysis and reveals that knowledge sharing behaviour was not significantly related to REL*INTRUST*OTHERS ($\beta = .008$, $t = .746$, $p > 0.1$). Consequently, the null hypothesis was accepted indicating that there is no relationship between knowledge sharing behavior and the moderator variable REL*INTRUST*OTHERS. Thus, the hypothesis **H3Oe4** is not supported.

H3Oe4 Others with religiosity positively moderate the relationship between interpersonal trust and knowledge sharing behavior.

In summary, the above result of the fourth model of multiple regression analysis reveals that the interaction effect of religiosity with Others on the relationship between interpersonal trust and knowledge sharing behaviour was not significant and thus, not supported.

The fifth interaction effect of religiosity and the 'Others' ethnic group on the relationship between scholar humility and knowledge sharing behaviour will be investigated by the multiple regression analysis. Seven predictor variables were utilised in the multiple regression analysis (EHO, REP, SE, INTRUST, S HUM, G HUM, REL*S HUM*OTHERS) to predict the dependent variable knowledge sharing behavior. All the predictor variables were entered into the regression analysis together with the dependent variable, all at once (see Appendix E23).

The above Table 4.13 represents the summary result of the fifth regression model which indicates that the overall F-test of the first regression model was significant ($F = 491.813$, $p < 0.01$) and the predictor variables together explained a portion of the variation in the dependent variable. The adjusted R^2 value was .379 suggesting that the explanatory power of the regression model shows that 37.9% of the variation in the dependent variable was accounted for by the eight predictor variables.

The result shows that the knowledge sharing behaviour was not significantly related to REL*S HUM*OTHERS ($\beta = .008$, $t = 0.753$, $p > 0.1$).

The insignificant effect of the moderator variable REL*S HUM*OTHERS on knowledge sharing behavior leads to the rejection of the hypothesis **H3Oe5**. The hypothesis assumes:

H3Oe5 Others with religiosity, positively moderate the relationship between scholar humility and knowledge sharing behavior.

In conclusion, the above result of the first model of multiple regression analysis pertaining to the interaction effect of religiosity with the Others ethnic group on the relationship between scholar humility and knowledge sharing behavior, does not support the hypothesis **H3Oe5** due to lack of evidence to support the relationship.

The sixth multiple regression analysis was used to examine the interaction effects of the moderator variables (REL*G HUM*OTHERS) on knowledge sharing behaviour. A total of seven independent variables (EHO, REP, SE, INTRUST, S HUM, G HUM, REL*G HUM*OTHERS) were entered in the regression analysis with the dependent variable knowledge sharing behavior, all at once (see Appendix E24).

The result of the sixth regression model was found significant, as shown in Table 4.13, and the overall F-test was ($F = 491.896$, $p < 0.01$). The adjusted coefficient of determination (adjusted R^2) shows the explanatory power of the regression model. The adjusted R^2 value of .379 indicates that the predictor variables were able to explain 37.9 % of the variation on the dependent variable.

The result of the regression analysis in Table 4.13 reveals that the knowledge sharing behaviour is not significantly related to REL*G HUM*OTHERS ($\beta = .010$, $t = 0.962$, $p > 0.1$).

The moderator variable REL*G HUM*OTHERS was found insignificantly related to knowledge sharing behavior, leading to the rejection of hypothesis **H3Oe6**. Therefore, hypothesis **H3Oe6** is not supported. Figure 4.5 shows the standardised beta among the interactions effects of REL with non-monetary factors and ‘Others’ ethnic groups on KSB.

H3Oe6 Others with religiosity, positively moderate the relationship between general humility and knowledge sharing behaviour.

Table 4.13 : Summary Result of the Interaction Effect of REL with Non-Monetary Factors and the Others Ethnic Group vs. KSB

Predictor Variables	St. Beta	T-value	Collinearity Statistics		Adj. R2	F
			Tolerance	VIF		
REL*EHO*O	.008	.737	.996	1.004	.379	491.808***
REL*REP*O	.010	.967	.994	1.006	.379	491.898***
REL*SE*O	.012	.164	.995	1.005	.379	491.995***
REL*INTRUST*O	.008	.746	.996	1.004	.379	491.811***
REL*S HUM*O	.008	.753	.996	1.004	.379	491.813***
REL*G HUM*O	.010	.962	.994	1.006	.379	491.896***

Dependent Variable KSB = knowledge sharing behaviour, St. = standardised, REL = religiosity, EHO = enjoyment of helping others, REP = reputation, SE = self-efficacy, INTRUST = interpersonal trust, S HUM = scholar humility, G HUM = general humility, O = Others, *** significant at $p < .01$.

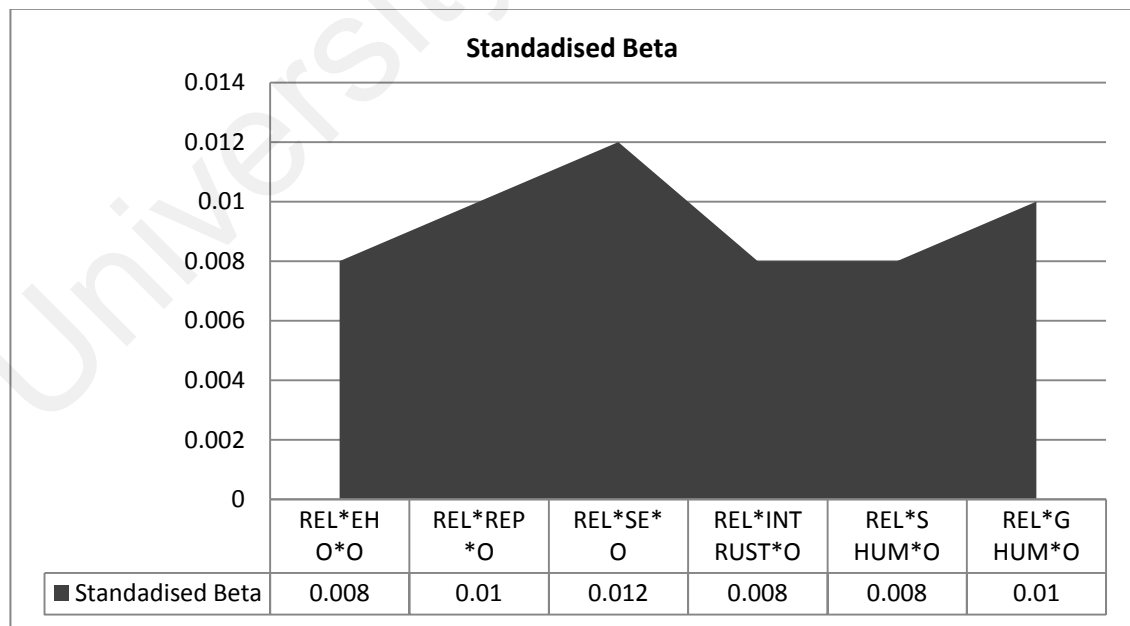


Figure 4.4 Standardised Beta among the Interactions Effects of REL with Non-Monetary Factors and Others Ethnic Group on KSB

In summary, the above result of the second multiple regression analysis reveals that the interaction effect of the moderator variable religiosity with the 'Others' ethnic group on the relationship between general humility and knowledge sharing behaviour was not supported.

4.9.4 Testing Research Hypothesis (H4) Related to Gender

This part of the research will focus on the multiple regression analysis that is used to investigate the interaction effects of religiosity among different genders that moderate the relationship between non-monetary variables and knowledge sharing behavior (see Appendix F1 to F12). The result of the regression models will answer question four in this study that says to what extent does religiosity among different gender moderates the relationship between non-monetary factors and knowledge sharing behaviour. Gender was divided into two categories - male and female. Dummy variables were created for the genders and each one of the dummy variables presented one categorical variable. When the male gender was represented by 1, female was represented by 0 (Hair et al., 2006). Therefore, to create a moderator variable, each non-monetary variable was multiplied by religiosity, and then multiplied by the gender groups that comprise male and female. As a result, the new moderator variables were created to be used in this part of the analysis and were shown in Table 4.14 and Table 4.15.

4.9.4.1 Interaction Effect of REL*Non-Monetary Factors*Male

In this section, multiple regression analysis was used to investigate the interaction effects of religiosity with the male gender on the relationship between non-monetary factors and knowledge sharing behaviour. Six models of regression analysis were used in order to investigate all the interaction effects.

Seven independent variables were entered into the first model of the multiple regression analysis, all at once, with knowledge sharing behaviour as a dependent variable. Tables 4.14 will summarise the result of the six models of regression analyses that relate to the religiosity level with non-monetary factors and the male gender. Eight independent variables (EHO, REP, SE, INTRUST, S HUM, G HUM and REL*EHO*MALE) were entered into the regression analysis with the dependent variable knowledge sharing behavior (see Appendix F1).

The result of the F-test in the first model of regression was ($F = 494.041$, $p < 0.01$). It was statistically significant and shows a strong relationship between knowledge sharing behaviour and the independent variables. The power of the model was presented by the adjusted R^2 value .380 describing that 38.0% of the variance in the dependent variable was explained by seven independent variables. Table 4.14 shows that knowledge sharing behaviour was related significantly to REL*EHO*MALE ($\beta = -.034$, $t = -3.201$, $p < 0.01$).

In the first model, the moderator variable REL*EHO*MALE was statistically significant but negatively related to knowledge sharing behavior, indicating that male respondents who enjoy helping others with religiosity are less frequent in their knowledge sharing with others. The insignificant result leads to the rejection of the hypothesis **H4Mg1**. Therefore, the result does not support hypothesis **H4Mg1** that assumes:

H4Mg1 Religiosity with the male gender positively moderates the relationship between the enjoyment of helping others and knowledge sharing behaviour.

In conclusion, the result of the first multiple regression analysis of the interaction effects of religiosity with the male gender on the relationship between the

enjoyment of helping each other and knowledge sharing behavior does not support the hypothesis **H4Mg1**.

The second model of the multiple regression analysis was run to examine the interaction effects of the moderator variables religiosity with the male gender on the relationship between reputation and knowledge sharing behaviour. A total of seven independent variables (EHO, REP, SE, INTRUST, S HUM, G HUM, REL*REP*MALE) were entered in the regression analysis with the dependent variable knowledge sharing behavior, all at once (see Appendix F2).

The regression model was found significant and the overall F-test was ($F = 494.721, p < 0.01$). The adjusted coefficient of determination (adjusted R^2) shows the explanatory power of the regression model. The adjusted R^2 value was .380 which indicates that the predictor variables were able to explain 38.0 % of the variation on the dependent variable.

The result of the regression analysis in Table 4.14 reveals that knowledge sharing behaviour was found significant but negatively related to REL* REP*MALE ($\beta = -.040, t = -3.633, p < 0.01$) revealing that male respondents who allocate a great importance to reputation and possess religiosity are less frequent in sharing their knowledge with other colleagues. Therefore, hypothesis **H4Mg2** was rejected.

H4Mg2 Religiosity with the male gender positively moderates the relationship between reputation and knowledge sharing behaviour.

To conclude, the above result of the second multiple regression analysis reveals that the interaction effect of the moderator variables religiosity with male gender on the relationship between reputation and knowledge sharing behaviour, was not supported.

In the third model, the interaction effect of the moderator variables (REL*MALE) on the relationship between self-efficacy and knowledge sharing behaviour was investigated using the multiple regression analysis.

Seven predictor variables were entered in the multiple regression analysis (EHO, REP, SE, INTRUST, S HUM, G HUM, and REL*SE*MALE) to predict the dependent variable knowledge sharing behavior. The predictor variables were entered into the regression analysis, all at once, with the dependent variable (see Appendix F3).

Table 4.14 shows that the overall F-test of the third model of the regression analysis was significant ($F = 493.967$, $p < 0.01$) and the predictor variables together explained a part of the variation in the dependent variable. The adjusted R² value was .380, revealing the explanatory power of the regression model, which suggests that 38.0% of the variance in the knowledge sharing behaviour were explained by the seven predictor variables.

Table 4.14 shows that the knowledge sharing behaviour was found significant but negatively related to REL*SE*MALE ($\beta = -0.34$, $t = -3.150$, $p < 0.1$). The negative sign on REL*SE*MALE indicates that male respondents who are religious and self-confident are less frequent in sharing knowledge with colleagues. This result rejects hypothesis **H4Mg3**.

H4Mg3 Religiosity with the male gender positively moderates the relationship between self-efficacy and knowledge sharing behaviour.

In conclusion, the above result of the third model of the multiple regression analysis pertaining to the interaction effect of the moderator variables REL*SE*MALE on knowledge sharing behavior, was not supported.

The fourth model of the multiple regression analysis was used to examine the interaction effect of the moderator variables (REL*MALE) on the relationship between interpersonal trust and knowledge sharing behaviour. A total of seven independent variables (EHO, REP, SE, INTRUST, S HUM, G HUM, and REL*INTRUST*MALE) were entered in the regression analysis with the knowledge sharing behavior as a dependent variable, all at once (see Appendix F4). The regression model was found significant and the overall F-test was ($F = 493.742, p < 0.01$). The adjusted coefficient of determination (adjusted R^2) shows the explanatory power of the regression model. The adjusted R^2 value was .380 which indicates that the predictor variables were able to explain 38.0 % of the variation on the dependent variable.

The result of the fourth regression analysis in Table 4.14 reveals that knowledge sharing behaviour was significant but negatively related to REL*INTRUST*MALE ($\beta = -.032, t = -2.991, p < 0.01$).

The negative sign of beta coefficient on the variable REL*INTRUST*MALE indicates that male respondents who are religious and trust each other tend to share less knowledge with others. This result rejects hypothesis **H4Mg4**.

H4Mg4 Religiosity with the male gender positively moderates the relationship between interpersonal trust and knowledge sharing behavior.

In summary, the result of the fourth model of the regression analysis of the interaction effects of the moderator variables REL*MALE on the relationship between interpersonal trust and knowledge sharing behavior, does not support hypothesis **H4Mg4**.

The fifth model of the interaction effect of the moderator variables REL*MALE on the relationship between scholar humility and knowledge sharing behaviour was investigated with the multiple regression analysis. Seven predictor variables were

utilised in the multiple regression analysis (EHO, REP, SE, INTRUST, S HUM, GHUM, and REL*S HUM*MALE) to predict the dependent variable knowledge sharing behaviour. The predictor variables were entered into the regression analysis, all at once, with the dependent variable (see Appendix F5).

Table 4.14 indicates that the overall F-test of the fifth model of the regression analysis was significant ($F = 494.005$, $p < 0.01$) and the predictor variables together explained a portion of the variation in the dependent variable. The adjusted R² value was .380 suggesting that the explanatory power of the regression model showed that 38.0% of the variation in the dependent variable was accounted for by the seven predictor variables.

The result shows that knowledge sharing behaviour was significant and negatively related to REL*S HUM*MALE ($\beta = -.034$, $t = -3.176$, $p < 0.01$).

The negative sign of REL*S HUM*MALE reveals that male respondents who are religious and humble are less frequent in sharing their knowledge with other colleagues. This result leads to the rejection of hypothesis **H4Mg5**.

H4Mg5 Religiosity with the male gender positively moderates the relationship between scholar humility and knowledge sharing behaviour.

In conclusion, the above result of the fifth model of multiple regression analysis pertaining to the interaction effect of the moderator variables REL*MALE on the relationship between scholar humility and knowledge sharing behaviour was not supported.

The sixth model of the multiple regression analysis was employed to investigate the interaction effects of the moderator variables REL*MALE on the relationship between general humility and knowledge sharing behaviour. Seven independent

variables (EHO, REP, SE, INTRUST, S HUM, G HUM and REL*G HUM*MALE) were entered in the regression analysis with the dependent variable knowledge sharing behavior, all at once (see Appendix F6). The overall F-test for the sixth model was found significant ($F = 493.383$, $p < 0.01$). The adjusted coefficient of determination (adjusted R^2) demonstrated the explanatory power of the regression model. The adjusted R^2 value was .379 which indicates that 37.9 % of the variation on knowledge sharing behaviour was accounted for by the predictor variables.

Table 4.14 shows the result of the sixth model of the regression analysis and reveals that the knowledge sharing behaviour was significant and negatively related to REL*G HUM*MALE ($\beta = -.30$, $t = -2.718$, $p < 0.01$).

The moderator variable REL*G HUM*MALE was found significant but negatively related to knowledge sharing behavior, revealing that male respondents who are humble and possess religiosity are less frequent in sharing their knowledge with other colleagues. This result leads to the rejection of hypothesis **H4Mg6**. Figure 4.6 shows the standardised beta among the interactions effects of REL with non-monetary factors and male gender on KSB.

H4Mg6 Religiosity with the male gender positively moderates the relationship between general humility and knowledge sharing behaviour

In conclusion, the above result of the sixth model of the multiple regression analysis shows that the interaction effect of the moderator variables REL*MALE on the relationship between general humility and knowledge sharing behavior was not supported.

Table 4.14: Summary Result of the Interaction Effect of REL with Non-Monetary Factors and the Male Gender vs. KSB

Predictor Variables	St. Beta	T-value	Collinearity S.		Adj. R ²	F
			Tolerance	VIF		
REL*EHO*M	-.034	-3.201***	.963	1.039	.380	494.041***
REL*REP*M	-.040	-3.633***	.920	1.087	.380	494.721***
REL*SE*M	-.034	-3.150***	.933	1.071	.380	493.967***
REL*INTRUST*M	-.032	-2.991***	.959	1.043	.380	493.742***
REL*S HUM*M	-.030	-3.176***	.941	1.062	.380	494.005***
REL*G HUM*M	-.032	-2.718***	.926	1.079	.379	493.383***

Dependent Variable KSB = knowledge sharing behaviour, St = standardised, REL = religiosity, EHO = enjoyment of helping others, REP = reputation, SE = self-efficacy, INTRUST = interpersonal trust, S HUM = scholar humility G HUM = general humility, M = Male, S = statistics, *** significant at $p < .01$.

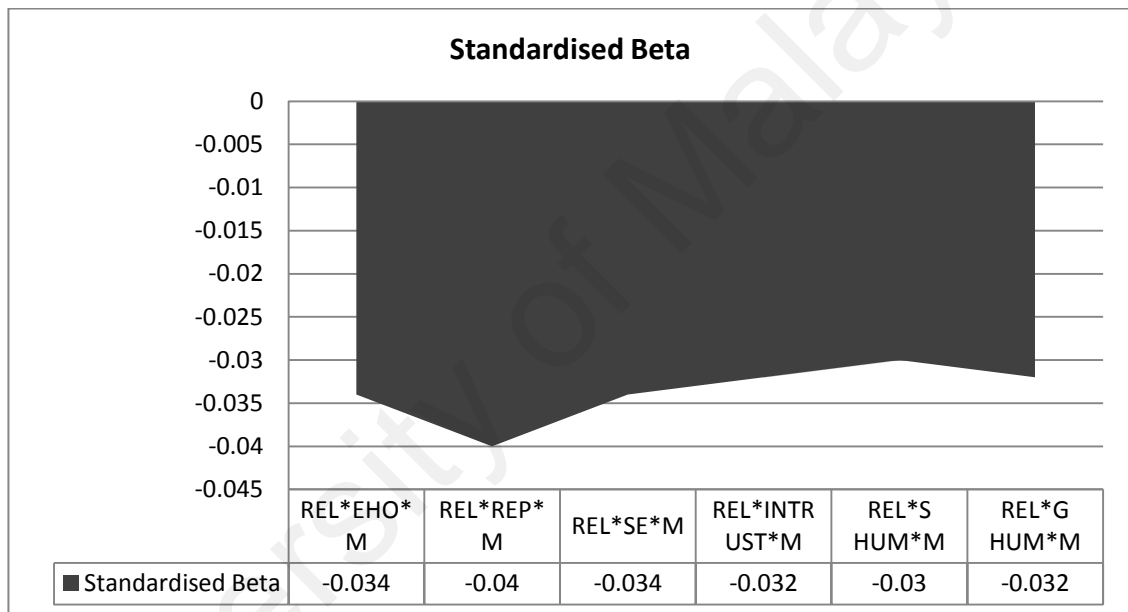


Figure 4.6 Standardised Beta among the Interactions Effects of REL with Non-Monetary Factors and Male Gender on KSB

The importance of the independent variables in the regression model was indicated by their beta coefficient value. The highest beta coefficient was by REL*REP*M (-.040), followed by REL*EHO*M (-.034), REL*SE*M (-.034), REL*S HUM*M (-.034), REL*INTRUST*M (-.032), and lastly, REL*G HUM*M (-.030). The regression models showed that there was no multicollinearity found in all the regression analyses.

4.9.4.2 Interaction Effect of REL*Non-Monetary Factors*Female

In this section, the second part of question four will be answered by testing the six hypotheses related to the interaction effects of religiosity levels with non-monetary factors with the female gender on knowledge sharing behaviour. These interactions will be investigated by the multiple regression analysis.

In the first model, seven independent variables were entered into the multiple regression analysis (EHO, REP, SE, INTRUST, S HUM, G HUM, REL*EHO*FEMALE) to predict the dependent variable knowledge sharing behaviour. The seven predictor variables were entered into the regression analysis, all at once, with the dependent variable (see Appendix F7).

Table 4.15 illustrates that the overall F-test of the first model of the regression analysis was significant ($F = 506.803$, $p < 0.01$) and the predictor variables together explained a part of the variation in the dependent variable. The adjusted R^2 value was .386 which reveals the explanatory power of the regression model, suggesting that 38.6% of the variance in the knowledge sharing behaviour were explained by the eight predictor variables.

Table 4.13 demonstrates that knowledge sharing behaviour was significantly related to REL*EHO*FEMALE ($\beta = .088$, $t = 8.105$, $p < 0.01$).

The positive sign of the beta coefficient on the variable REL*EHO*FEMALE was found positively related to knowledge sharing behaviour, implying that female respondents who enjoy helping others and possess religiosity often share their knowledge with colleagues. Therefore, hypothesis **H4Fg1** was supported.

H4Fg1 Religiosity with the female gender positively moderates the relationship between the enjoyment of helping others and knowledge sharing behaviour.

In summary, the result of the model of the multiple regression analysis related to the interaction effect of the moderator variables REL*FEMALE on the relationship between the enjoyment of helping others and knowledge sharing behaviour, supports the hypothesis **H4Fg1**.

In the second model, the interaction effect of the moderator variables REL*FEMALE on the relationship between reputation and knowledge sharing behaviour was examined by the multiple regression analysis.

Seven predictor variables were utilised in the second model of multiple regression analysis (EHO, REP, SE, INTRUST, S HUM, G HUM, REL*REP*FEMALE) to predict the dependent variable. The predictor variables were entered, all at once, into the regression analysis with knowledge sharing behavior (see Appendix F8).

Table 4.15 indicates that the overall F-test of the second regression model was significant ($F = 506.885$, $p < 0.01$) and the predictor variables together explained a portion of the variation in the dependent variable. The adjusted R^2 value was .386, which suggests that the explanatory power of the regression model shows that 38.6% of the variation in the dependent variable was accounted for by the eight predictor variables.

Table 4.15 shows that the knowledge sharing behaviour was significantly related to REL*REP*FEMALE ($\beta = .087$, $t = 8.127$, $p < 0.01$).

The relationship between the interaction effect of REL*REP*FEMALE was found positively related to knowledge sharing behaviour, implying that religious female respondents who cared about personal reputation regularly shared their knowledge with their peers. This result reveals that the hypothesis **H4Fg2** is supported.

H4Fg2 Religiosity with the female gender positively moderates the relationship between reputation and knowledge sharing behaviour.

In conclusion, the above result of the second model of the multiple regression analysis, pertaining to the interaction effect of the moderator variable levels of religiosity with the female gender on the relationship between reputation and knowledge sharing behavior, supports the hypothesis **H4fm2**.

The third model of the multiple regression analysis was run to examine the interaction effects of the moderator variables REL*FEMALE on the relationship between self-efficacy and knowledge sharing behaviour. A total of seven independent variables (EHO, REP, SE, INTRUST, S HUM, G HUM, REL*SE*FEMALE) were entered in the regression analysis with the knowledge sharing behavior as a dependent variable, all at once (see Appendix F9).

The regression model was found significant and the overall F-test was ($F = 505.668$, $p < 0.01$). The adjusted coefficient of determination (adjusted R^2) shows the explanatory power of the regression model. The adjusted R^2 value was .386 which indicates that the predictor variables were able to explain 38.6 % of the variation on the dependent variable.

The third result of the regression analysis in Table 4.15 reveals that knowledge sharing behaviour was significantly related to REL* SE*FEMALE ($\beta = .084$, $t = 7.795$, $p < 0.01$).

The positive sign of the beta coefficient on the variable REL*SE*FEMALE indicates that females who have self-confidence and have religiosity tend to share their knowledge frequently. As a result, hypothesis **H4Fg3** was supported.

H4Fg3 Religiosity with the female gender positively moderates the relationship between self-efficacy and knowledge sharing behaviour.

In summary, the above result of the third multiple regression analysis reveals that there is a relationship between REL*SE*FEMALE and knowledge sharing behaviour.

The fourth model examines interaction effects of the moderator variables REL*FEMALE on the relationship between interpersonal trust and knowledge sharing behaviour. Seven predictor variables were entered in the multiple regression analysis (EHO, REP, SE, INTRUST, S HUM, G HUM, RE*INTRUST*FEMALE) to predict the dependent variable. All the predictor variables were entered at once into the regression analysis with knowledge sharing behavior as a dependent variable (see Appendix F10).

Table 4.15 shows that the overall F-test of the fourth regression model was significant ($F = 505.603$, $p < 0.01$) and the predictor variables together explained a part of the variation in the dependent variable. The adjusted R^2 value was .385 which reveals the explanatory power of the regression model, suggesting that 38.5% of the variance in the knowledge sharing behaviour was explained by the seven predictor variables.

Table 4.15 shows that knowledge sharing behaviour was significantly related to REL*INTRUST*FEMALE ($\beta = .085$, $t = 7.777$, $p < 0.01$). The interaction effect of REL*INTRUST*FEMALE was found positively related to knowledge sharing behaviour, implying that female respondents who have good intentions toward each other and possess religiosity virtue are frequently sharing their knowledge. This result supports the hypothesis **H4Fg4**.

H4Fg4 Religiosity with the female gender positively moderates the relationship between interpersonal trust and knowledge sharing behaviour.

In conclusion, the above result of the multiple regression analysis pertaining to the interaction effect of the moderator variables REL*FEMALE on the relationship between interpersonal trust and knowledge sharing behaviour shows that hypothesis **H4Fg4** was supported.

The fifth model of the multiple regression analysis was used to investigate the interaction effects of the moderator variables REL*FEMALE on the relationship between scholar humility and knowledge sharing behaviour. A total of seven independent variables (EHO, REP, SE, INTRUST, S HUM, G HUM, REL*S HUM*FEMALE) were entered in the regression analysis with the dependent variable, all at once (see Appendix F11).

As seen in Table 4.15, the fifth regression model was found significant and the overall F-test was ($F = 506.146, p < 0.01$). The adjusted coefficient of determination (adjusted R^2) shows the explanatory power of the regression model. The adjusted R^2 value was .385 which indicates that the predictor variables were able to explain 38.5 % of the variation on the dependent variable.

The result of the regression analysis in Table 4.15 reveals that knowledge sharing behaviour was significantly related to S REL*S HUM*FEMALE ($\beta = .086, t = 7.927, p < 0.01$).

The positive sign of beta coefficient on the variable REL*S HUM*FEMALE indicates that females who are humble and have high level of religiosity tend to share their knowledge frequently. This result supported hypothesis **H4Fg5**.

H4Fg5 Religiosity with the female gender positively moderates the relationship between scholar humility and knowledge sharing behaviour.

In conclusion, the above result of the multiple regression analysis reveals that the interaction effect of the moderator variable REL*FEMALE on the relationship between scholar humility and knowledge sharing behaviour was found significant and supported the hypothesis.

The sixth model of the multiple regression analysis was run to examine the interaction effects of the moderator variables REL*FEMALE on the relationship between general humility and knowledge sharing behaviour. A total of seven independent variables (EHO, REP, SE, INTRUST, S HUM, G HUM, REL*G HUM*FEMALE) were entered in the regression analysis with the dependent variable knowledge sharing behavior, all at once (see Appendix F12).

The regression model was found significant and the overall F-test was ($F = 504.353, p < 0.01$). The adjusted coefficient of determination (adjusted R^2) shows the explanatory power of the regression model. The adjusted R^2 value was .385 which indicates that the predictor variables were able to explain 38.5 % of the variation on the dependent variable.

The result of the sixth model of the regression analysis in Table 4.15 reveals that knowledge sharing behaviour was significantly related to REL*G HUM*FEMALE ($\beta = .080, t = 7.420, p < 0.01$).

The positive sign of the beta coefficient on the variable REL*G HUM*FEMALE indicates that females who are religious and humble tend to share their knowledge frequently. The hypothesis (**H4Fg6**) is supported. Figure 4.7 shows the standardised beta among the interactions effects of REL with non-monetary factors and the female gender on KSB.

H4Fg6 Religiosity with the female gender positively moderates the relationship between general humility and knowledge sharing behaviour.

In summary, the above result of the multiple regression analysis reveals the interaction effect of the moderator variables REL*FEMALE on the relationship between general humility and knowledge sharing behaviour, was supported.

Table 4.15: Summary Result of the Interaction Effect of REL Levels with Non-Monetary Factors and the Female Gender vs. KSB

Predictor Variables	St. Beta	T-value	Collinearity S.		Adj. R ²	F
			Tolerance	VIF		
REL*EHO*F	.088	8.105***	.924	1.082	.386	506.803***
REL*REP*F	.087	8.127***	.949	1.054	.386	506.885***
REL*SE*F	.084	7.795***	.942	1.061	.385	505.668***
REL*INTRUST*F	.085	7.777***	.906	1.104	.385	505.603***
REL*S HUM*F	.086	7.927***	.926	1.080	.385	506.146***
REL*G HUM*F	.080	7.420***	.930	1.076	.385	504.353***

Dependent Variable KSB = knowledge sharing behaviour, St = standardised, REL = religiosity, EHO = enjoyment of helping others, REP = reputation, SE = self-efficacy, INTRUST = interpersonal trust, S HUM = scholar humility G HUM = general humility, F = female, S = statistics, *** significant at $p < .01$.

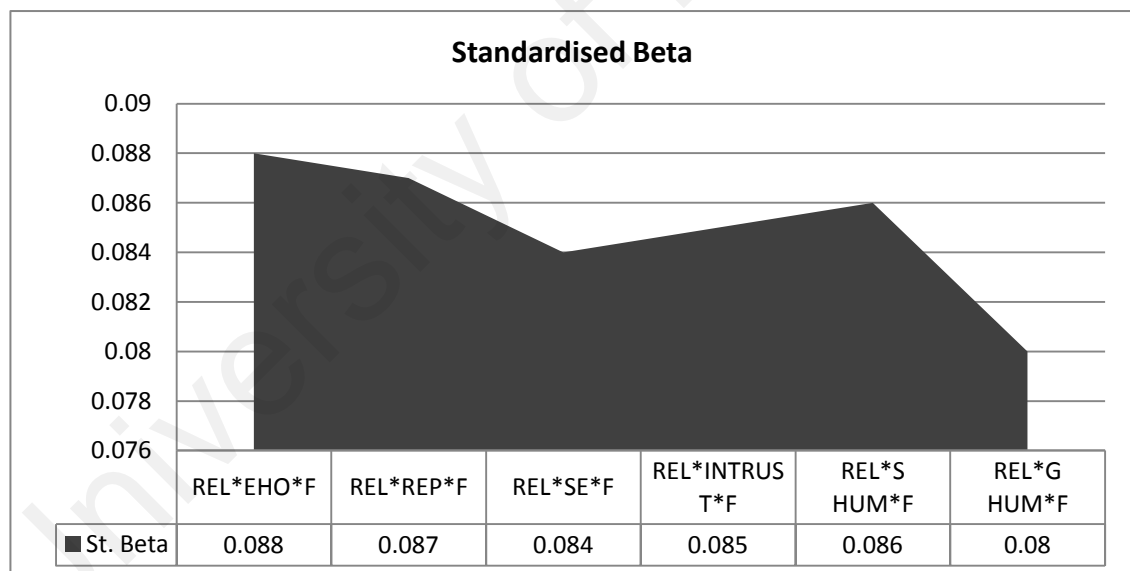


Figure 4.7 Standardised Beta among the Interactions Effects of REL with Non-Monetary Factors and Female Gender on KSB

The importance of the independent variables in the regression models was indicated by their beta coefficient value. The highest beta coefficient in Table 4.13 was REL*EHO*F (.088), followed by REL*REP*F (.087), REL*S HUM*F (.086), REL*INTRUST*F (.085), REL*SE*F (.084) and REL*G HUM*F (.080) respectively.

The regression models summarised in Table 4.13 show that there was no multicollinearity found.

4.9.5 Testing Research Hypothesis 5

T-test was used to differentiate between Malaysian and International students in terms of knowledge sharing behaviour. The two groups were entered into the analysis of the T-test with the dependent variable (knowledge sharing behaviour). Table 4.164 shows the result of the independent samples test. The result indicates that the F-test was significant at ($p < 0.05$). Consulting the t-value significance from the output, it was significant with ($t = 6.081, p < .05$) which indicates rejection of the null hypothesis (equal variance assumed) and acceptance of the alternative hypothesis. And the t-test for equality of means was significant, which shows that there was a difference between the means.

Table 4.17 shows the difference of the means between the two groups. The mean of the Malaysian group was (4.02) greater than the mean of the International group (3.79). This result supported the hypothesis5.

H5 There is a difference between Malaysian and International postgraduate students in terms of knowledge sharing behaviour.

In conclusion, this result reveals that there was a difference between Malaysian and International postgraduate students in terms of knowledge sharing behaviour. The Malaysian students share their knowledge more than International students.

Table 4.16 : Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
KSB	Equal variances assumed	25.799	.000	6.567	1265	.000	.230	.035	.161	.161
	Equal variances not assumed			6.081	629.597	.000	.230	.038	.156	.156

Table 4.17 : Mean Difference between Groups

Country		N	Mean	Std. Deviation	Std. Error Mean
KSB	Malaysian	77	4.02	.535	.018
	International	90	3.79	.655	.033

4.10 Results of Hypotheses Testing

This section reveals the result of the hypotheses testing for all the five questions. The result of the analysis of hypotheses testing shows that some of the hypotheses were supported and others were not supported.

4.10.1 Result of Testing Hypothesis 1

The first hypothesis, which consisted of seven sub-hypotheses, proposed that there is a positive relationship between non-monetary variables and knowledge sharing behaviour. The result of the sub-hypotheses test revealed that five hypotheses were supported and two were not supported. Table 4.18 shows the testing of hypothesis 1:

Table 4.18 : Summary Result of Testing Hypothesis 1

	Hypothesis	Result
H1a	There is a positive relationship between the enjoyment of helping others and knowledge sharing behaviour.	Supported
H1b	There is a positive relationship between reputation and knowledge sharing behaviour.	Not Supported
H1c	There is a positive relationship between self-efficacy and knowledge sharing behaviour.	Supported
H1d	There is a positive relationship between interpersonal trust and knowledge sharing behaviour.	Supported
H1e1	There is a positive relationship between scholar humility and knowledge sharing behaviour.	Supported
H1e2	There is a positive relationship between general humility and knowledge sharing behaviour.	Not Supported
H1f	There is a positive relationship between religiosity and knowledge sharing behaviour.	Supported

4.10.2 Results of Testing Hypothesis 2

The second hypothesis proposed religiosity as a moderator variable related positively to the relationship between non-monetary variables and knowledge sharing behaviour. The result of the hypothesis testing in Table 4.19 shows that religiosity plays a

positive role in the relationship between the five non-monetary variables and knowledge sharing behaviour.

Table 4.19 : Summary Result of Testing Hypothesis 2

	Hypothesis	Result
H2a	Religiosity positively moderates the relationship between the enjoyment of helping others and knowledge sharing behaviour.	Supported
H2b	Religiosity positively moderates the relationship between reputation and knowledge sharing behaviour.	Supported
H2c	Religiosity positively moderates the relationship between self-efficacy and knowledge sharing behaviour.	Supported
H2d	Religiosity positively moderates the relationship between interpersonal trust and knowledge sharing behaviour.	Supported
H2e1	Religiosity positively moderates the relationship between scholar humility and knowledge sharing behaviour.	Supported
H2e2	Religiosity positively moderates the relationship between general humility and knowledge sharing behaviour.	Supported

4.10.3 Result of Testing Hypothesis 3

In this part of the research, the summary result of testing hypothesis 3 will be shown. The third hypothesis assumes that religiosity with different ethnic groups moderates the relationship between non-monetary variables and knowledge sharing behaviour. Table 4.20 shows the summary of the results of testing hypothesis 3. In this study, there are four ethnic groups (Malay, Chinese, Indian and Others).

Table 4.20 : Summary Results of Testing Hypothesis 3

	Hypothesis	Result
H3Me1	Malays with religiosity, positively moderates the relationship between the enjoyment of helping others and knowledge sharing behaviour.	Supported
H3Me2	Malays with religiosity, positively moderates the relationship between reputation and knowledge sharing behaviour.	Supported
H3Me3	Malays with religiosity, positively moderates the relationship between self-efficacy and knowledge sharing behaviour.	Supported
H3Me4	Malays with religiosity, positively moderates the relationship between interpersonal trust and knowledge sharing behaviour.	Supported
H3Me5	Malays with religiosity, positively moderates the relationship between scholar humility and knowledge sharing behaviour.	Supported
H3Me6	Malays with religiosity, positively moderates the relationship between general humility and knowledge sharing behaviour.	Supported
H3Ce1	Chinese with religiosity, positively moderates the relationship between the enjoyment of helping others and knowledge sharing behavior.	Not Supported

Table 4.20 : ‘Continued’ Summary Results of Testing Hypothesis 3

H3Ce2	Chinese with religiosity positively moderates the relationship between reputation and knowledge sharing behaviour.	Not Supported
H3 Ce3	Chinese with religiosity positively moderates the relationship between self-efficacy and knowledge sharing behaviour.	Not Supported
H3Ce4	Chinese with religiosity positively moderates the relationship between interpersonal trust and knowledge sharing behaviour.	Not Supported
H3Ce5	Chinese with religiosity positively moderates the relationship between scholar humility and knowledge sharing behaviour.	Not Supported
H3Ce6	Chinese with religiosity positively moderates the relationship between general humility and knowledge sharing behaviour.	Not Supported
H3Ie1	Indians with religiosity, positively moderates the relationship between the enjoyment of helping others and knowledge sharing behaviour.	Supported
H3Ie2	Indians with religiosity, positively moderates the relationship between reputation and knowledge sharing behaviour.	Supported
H3Ie3	Indians with religiosity, positively moderates the relationship between self-efficacy and knowledge sharing behaviour.	Supported
H3Ie4	Indians with religiosity, positively moderates the relationship between interpersonal trust and knowledge sharing behaviour.	Supported
H3Ie5	Indians with religiosity positively moderates the relationship between scholar humility and knowledge sharing behaviour.	Supported
H3Ie6	Indians with religiosity, positively moderates the relationship between general humility and knowledge sharing behaviour.	Supported
H3Oe1	Others with religiosity, positively moderates the relationship between the enjoyment of helping others and knowledge sharing behaviour.	Not Supported
H3Oe2	Others with religiosity, positively moderates the relationship between reputation and knowledge sharing behaviour.	Not Supported
H3Oe3	Others with religiosity, positively moderates the relationship between self-efficacy and knowledge sharing behaviour.	Not Supported
H3Oe4	Others with religiosity, positively moderates the relationship between interpersonal trust and knowledge sharing behaviour.	Not Supported
H3Oe5	Others with religiosity, positively moderates the relationship between scholar humility and knowledge sharing behaviour.	Not Supported
H3Oe6	Others with religiosity, positively moderates the relationship between general humility and knowledge sharing behaviour.	Not Supported

4.10.4 Results of Testing Hypotheses 4

Hypothesis 4 concerns the moderator effects of religiosity with different genders on the relationship between non-monetary variables (EHO, REP, SE, INTRUST, S HUM, and G HUM) and knowledge sharing behaviour. In this study, there are two gender groups - male and female. The following Table 4.21 represents the summary result of testing the hypotheses:

Table 4.21 : Summary Results of Testing Hypothesis 4

	Hypothesis	Result
H4Mg1	Males with religiosity, positively moderates the relationship between the enjoyment of helping others and knowledge sharing behaviour.	Not Supported
H4g1	Males with religiosity, positively moderates the relationship between reputation and knowledge sharing behaviour.	Not Supported
H4g1	Males with religiosity, positively moderates the relationship between self-efficacy and knowledge sharing behaviour.	Not Supported
H4Mg1	Males with religiosity, positively moderates the relationship between interpersonal trust and knowledge sharing behaviour.	Not Supported
H4Mg1	Males with religiosity, positively moderates the relationship between scholar humility and knowledge sharing behaviour.	Not Supported
H4Mg1	Males with religiosity, positively moderates the relationship between general humility and knowledge sharing behaviour.	Not Supported
H4Fg1	Females with religiosity, positively moderates the relationship between the enjoyment of helping others and knowledge sharing behaviour.	Supported
H4Fg2	Females with religiosity, positively moderates the relationship between reputation and knowledge sharing behaviour.	Supported
H4Fg3	Females with religiosity, positively moderates the relationship between self-efficacy and knowledge sharing behaviour.	Supported
H4Fg4	Females with religiosity, positively moderates the relationship between interpersonal trust and knowledge sharing behaviour.	Supported
H4Fg5	Females with religiosity, positively moderates the relationship between scholar humility and knowledge sharing behaviour.	Supported
H4Fg6	Females with religiosity, positively moderates the relationship between scholar humility and knowledge sharing behaviour.	Supported

4.10.5 Results of Testing Hypothesis 5

The hypothesis 5 proposed that there is a difference between Malaysian and International students in terms of knowledge sharing behaviour. The test of the hypothesis was supported, as shown in Table 4.22, and the result found that Malaysian students share their knowledge more than International students.

Table 4.22 : Summary Result of Testing Hypothesis 5

	Hypothesis	Result
H5	There is a difference between Malaysian and International students in terms of knowledge sharing behaviour.	Supported

4.11 Summary of the Results

In this section, a summary of the analysis result will be revealed. In this study, multiple regression was used for analysing the data. Firstly, it was used to find out which non-monetary variables best predict knowledge sharing behaviour. There were seven independent variables (EHO, REP, SE, INTRUST, S HUM, G HUM and REL). Secondly, multiple regression was used to find out the role and the effect of religiosity on the relationship between non-monetary variables and knowledge sharing behaviour. Thirdly, multiple regression was used to evaluate the moderating effects of religiosity among ethnic groups on the relationship between non-monetary variables and knowledge sharing behaviour. Fourthly, multiple regression was used to examine the religiosity effects between gender groups on the relationship between non-monetary factors and knowledge sharing behaviour. Finally, the t-test was used to distinguish between Malaysian and International students in terms of knowledge sharing behaviour. The following paragraphs highlight the result.

All the independent variables were found to predict knowledge sharing behavior, except for reputation and general humility. Religiosity was found to play a positive moderating role on the relationship between non-monetary variables and knowledge sharing behaviour. Religiosity among different ethnic groups was found to positively moderate the relationship between non-monetary variables and knowledge sharing behavior, except for Chinese and Others ethnic groups. The results show that females with religiosity were more regular in sharing their knowledge than religious males. In addition, the results reveal that Malaysian students share their knowledge more than International students.

The next chapter includes the major conclusion and findings, theoretical and empirical implementations of the major findings, recommendations for further research and the limitations.

University of Malaya

CHAPTER FIVE

DISCUSSION

5.1 Introduction

The main objective of this chapter is to discuss the findings and connect them to the theories mentioned in the literature review chapter, from which the framework of this research comes and relates to the research questions. The fundamental purpose of this empirical study is to establish a relationship between non-monetary factors and knowledge sharing behavior, and see which factors predict knowledge sharing behaviour in the context of postgraduate students. At the same time, the study links religiosity to those factors that were drawn from the mentioned theories to predict knowledge sharing behaviour and to evaluate the interaction effect of religiosity among ethnics and gender groups to knowledge sharing behaviour. An approved conceptual framework will be presented. This chapter presents a discussion of the main findings according to the research questions, and explains it in light of the empirical evidence carried out in this study.

5.2 Non-Monetary Factors Influencing Knowledge Sharing

To answer question one “which non-monetary factors motivate postgraduate students to share knowledge in university?” this study investigated six factors related to knowledge sharing behaviour. Based on prior studies in knowledge sharing and knowledge sharing behaviour, this study proposed that non-monetary factors motivate and encourage graduate students to share their knowledge with colleagues. The result of the data analysis revealed that there was significant relationship between the enjoyment of helping others, self-efficacy, interpersonal trust, scholar humility and religiosity. These findings proved that non-monetary factors are important to encourage graduate students to share their

knowledge. No significant evidence was found to support the relationship between reputation, general humility and knowledge sharing behaviour. This suggests that the effect of reputation and general humility were rather limited. This may be due to the collaboration between the graduate students, which may reduce the effect of reputation as one of the motivators of knowledge sharing. Prior literature indicates that recognition by colleagues motivates individuals to share their knowledge (Wasko & Faraj, 2005). Moreover, it seems that reputation can be considered as a moderator among employees in an organisation, as they may stay many years together within one organisation and gain enough experience to share their knowledge. In doing so, they will be recognised by other employees and gain status, reputation and recognition among their peers. Whereas graduate students generally stay in the university for a minimum for two years and maximum of four to five years, which is not a long enough period to get a reputation.

5.2.1 Enjoyment of Helping Others

The social exchange theory argued that the enjoyment of helping others affects human behaviour. Later, other studies verified and validated the theory (Lin, 2007; Kankanhalli et al., 2005; Olatokun & Nwafor, 2012). The research hypothesis proposed that the enjoyment of helping others positively related to knowledge sharing behaviour. The findings showed that the enjoyment of helping others significantly affected knowledge sharing behavior ($\beta = .177$, $t = 7.123$, $p < .01$). These results indicate that intrinsic motivation, which is embedded in the enjoyment of helping others, is proven to be a good motivator for graduate students to share their knowledge. The result is similar to the prior study of Davenport and Prusak (1998b) which identifies altruism as one of the motivators of knowledge sharing. The proposed model of this study was investigated empirically on the association of the enjoyment of helping others with knowledge sharing behaviour. The

output of the multiple regression analysis supported the hypotheses suggested (H2A). This result is consistent with previous studies (Lin, 2007; Kankanhalli et al., 2005; Hsu & Lin, 2008).

5.2.2 Reputation

The theory of social exchange identifies reputation as a social reward expected to be returned from social interaction. Previous researches stress on the importance of reputation as an intrinsic motivator to employees to share their knowledge with colleagues (Kankanhalli et al., 2005).

The research framework proposed that reputation related positively to knowledge sharing behaviour. The result of the current study reveals that reputation was not related to knowledge sharing behaviour ($\beta = .010$, $t = .414$, $p = > .05$), which does not support the hypothesis (H2B). In similar studies, reputation was proven to enhance personal reputation and enabled individuals to maintain status within groups in the context of online knowledge contribution (Wasko & Faraj, 2005) and participating knowledge in blog activities (Hsu & Lin, 2008). The logical justification to this situation might be due to the non-applicability of reputation in the context of postgraduate students in universities, for the short period of time that the postgraduate students spend in the universities (around two or three years), which might not be adequate to build a reputation. As mentioned in the population of this study, most of the respondents were masters' students. On the other hand, since most of the respondents were postgraduate students and still learning, they might not consider reputation as an important issue, while sharing their knowledge. However, this result may propose that future studies might investigate the role of reputation as a motivator for knowledge sharing behaviour in the context of university graduate students.

5.2.3 Self-Efficacy

The social cognitive theory highlighted the inner abilities of a person and self-capabilities that push a person to do a particular task (Bandura, 1989; Suh, 2013). Consequently, the research hypothesis (H2C) was formulated and proposed that there was a positive relationship between self-efficacy and knowledge sharing behaviour. In order to validate the model of the study in terms of the self-efficacy construct, the multiple linear regression analysis was conducted. The findings of the regression analysis revealed that self-efficacy significantly related to knowledge sharing behaviour ($\beta = .126$, $t = 4.806$, $p = <.01$) which shows a consistency with the social cognitive theory. In addition, the proposed hypothesis (H2C) was strongly supported in this study. The findings of the study imply that graduate students who have confidence and competence in their ability are more likely to share their knowledge. In other words, graduate students who believe in their personal ability tend to be more motivated to share their knowledge than those who lacked such confidence in themselves. In this sense, to promote the knowledge sharing behaviour among graduate students, an emphasis must be made on non-monetary factors, such as self-efficacy to motivate such behaviour. The results were in line with prior results or previous studies (Compeau & Higgins, 1995; Lin, 2007; Kankanhalli et al., 2005; Kuo & Young, 2008; Olatokun & Nwafor, 2012; Tohidinia & Mosakhani, 2010). As proposed and proven by prior studies, self-efficacy strengthened the behaviour towards knowledge sharing.

5.2.4 Interpersonal Trust

The social capital theory proved that personal relationships were established on the basis of mutual trust. This research proposed that there is a positive relationship between interpersonal trust and knowledge sharing behaviour. The findings of the study provided substantial evidence that supported the research hypothesis, which proposed that

interpersonal trust positively related to knowledge sharing behaviour. Interpersonal trust was found significantly related to knowledge sharing behaviour in the context of graduate students in public Malaysian universities ($\beta = .371$, $t = 14.970$, $p = < .01$). Therefore, the findings come along with the proposed model regarding the interpersonal trust factor. The findings imply that mutual trust among graduate students is an essential factor for a better environment among students to encourage them to share their knowledge. The result of this study confirms the earlier findings in the area of knowledge sharing, indicating that interpersonal trust is a critical determinant of knowledge sharing among graduate students. These findings are consistent with the results of Ma et al. (2008), Pai (2006), Wu et al. (2009), Davenport, De Long, and Beers (1998b), Currie and Kerrin (2003), and Zarraga and Bonache (2003).

5.2.5 Scholar Humility

None of the previous research studied humility as a virtue in the context of graduate students in universities. The virtue theory argued that the traits of a good person influenced his attitude and affected his behaviour. Humility as a trait influenced human behaviour. It was not used before to predict knowledge sharing behaviour. According to the factor analysis result, humility was extracted to two factors. The new dimensions were labeled as scholar humility and general humility. The research hypothesis (H2E) stated that there is a positive relationship between scholar humility and knowledge sharing behaviour. As mentioned earlier in Chapter Three section 3.4.5, scholar humility refers to the humility that scholars acquired from their huge knowledge, the more knowledge the scholars have, the more humble they are. The findings of this study proved that scholar humility was significantly related to knowledge sharing behaviour ($\beta = .082$, $t = 2.955$, $p < .05$). As mentioned in the hypothesis, there is a positive relation between scholar humility and

knowledge sharing behaviour. The findings approved the proposed research model of this study regarding the scholar humility dimension. The empirical findings increased the evidence of the prior theory of virtue of Aristotle, and confirmed previous literature that stated humility as a virtue that influenced human behaviour (Morris et al., 2005; Sharman, 1991).

Scholar humility was found significantly related to knowledge sharing behaviour which reveals that the perceived humble graduate students willingly share knowledge with colleagues more than others. The prior pertinent literature focused on other behavioural areas such as leadership behaviour (Morris et al., 2005; Klenke, 2005); sexual harassing behaviour (Lee et al., 2003) and organisation behaviour (Vera & Lopez, 2004), whereas, this study raises an important issue regarding scholar humility as a valid predictor of knowledge sharing behaviour.

5.2.6 General Humility

The research proposed that there is a positive relationship between humility and knowledge sharing behaviour. Since the humility factors are divided into two factors, and the second factor is labeled as general humility, which refers to innate humility that is embedded into the human beings by nature. Thus, the hypothesis (H2E2) stated that, there is a positive relationship between general humility and knowledge sharing behaviour. The findings of this study indicates that general humility was not significantly related to knowledge sharing behaviour ($\beta = .008$, $t = .307$, $p = > .05$). whereas previous literature and related studies suggested a positive relation between humility and human behaviour (Morris et al., 2005; Vera & Lopez, 2004; Lee et al., 2003b; Klenke, 2005). An explanation for the lack of support to this status might be due to different understandings of the concept. Some people might perceive humility as a negative self-view or sense of worthlessness (Exline &

Geyer, 2004), while others (narcissistic) hold an unfavourable view regarding humility; they link it with weakness and lack of confidence (Exline & Geyer, 2004). Moreover, some perceive humility as underwear - very important, but showing it to others is an indecent behaviour (Vera & Lopez, 2004). Klenke (2005) noted that humility in the marketplace is perceived as being weak and possessing low self-confidence. In addition, graduate students might perceive general humility as a general character that could be found in any person, so they do not pay much attention to it as a salient virtue. However, these preliminary findings could be investigated in further studies and general humility measures could be revised.

5.3 Moderator Role of Religiosity

Question two in this study asks “what role does religiosity play in the relationship between non-monetary factors and knowledge sharing behavior?” Religiosity was hypothesised in the research model of this study as a moderator variable on the relationship between non-monetary factors and knowledge sharing behaviour, which has not been studied before in the context of knowledge sharing. The hypothesis (H2) states that religiosity moderates positively the relationship between non-monetary factors and knowledge sharing behaviour. The findings validated the research model and proved the hypothesis (H2) too. The findings verified the research model in regards to religiosity as a moderator. The moderator effect has been shown in model 1 Table 4.8 where the adjusted R^2 value was .112 and the model was significant ($F = 161.423$, $p < .05$), whereas, the coefficient beta value was $\beta = .336$, $t = 12.705$, and $p < .05$. The findings provide strong evidence, which supports hypothesis 2. Table 4.9 shows the moderator effects of religiosity with the six independent variables and knowledge sharing behaviour. All the interactions of religiosity with the six non-monetary factors were significantly related to knowledge sharing behaviour. This means religiosity is a strong moderator. Even though the non-

monetary factors were not significant toward knowledge sharing behaviour in respect to reputation and general humility, as mentioned in model 2 Table 4.8, but when interacted with religiosity, gave findings which show a positive sign toward knowledge sharing behaviour. Therefore, the findings of this study was found consistent with the findings of previous studies (Delener, 1994; Essoo & Dibb, 2004; Mokhlis, 2006a; Ong & Moschis, 2006; Sood & Nasu, 1995; Korn & Zukerman, 2011), including studies on substance use behaviour (Dunn, 2005), spring break behaviour (Mattila et al., 2001) and sexual harassing behaviour (Pulson et al., 1998), which proposed that religiosity was an influential factor positively affecting human behaviour.

5.4 Interaction Effect of Religiosity

In order to answer question 3: “to what extent does religiosity among different ethnic groups moderate the relationship between non-monetary factors and knowledge sharing behaviour. Religiosity, as an influential factor that affects human behavior, was investigated in many areas such as consumer behaviour, decision-making behaviour, shopping behavior and social behaviour. This study investigates the interaction effects of religiosity with Malaysian ethnicities on the relationship between non-monetary factors and knowledge sharing behaviour, which has not been investigated before. The following discussion will take into account the interaction of religiosity with ethnicity in section 5.4.1 and then, the interaction of religiosity with gender in section 5.4.2.

5.4.1 Interaction Effect of Religiosity with Ethnicity

Hypothesis3 was related to the interaction effect of religiosity with Malaysian ethnicities, and stated that religiosity among different ethnic groups moderates the relationship between non-monetary factors and knowledge sharing behaviour. This

hypothesis was tested through testing the sub four hypotheses (H3a, H3b, H3c, and H3d). The findings revealed that the interaction effect of religiosity with Malay and Indian ethnic groups with non-monetary factors were significantly related to knowledge sharing behaviour and supported the H3a. In contrast, the interaction effect of religiosity with Chinese and Others ethnicity on the relationship between non-monetary factors and knowledge sharing behaviour was not significant, and showed insufficient evidence to support the H3b. Although, there might be some Chinese with high level of religiosity, the finding showed the opposite. The justification to these findings might be due to the culture differences among the Chinese ethnic group, who might be highly motivated by financial rewards and appear to have less concern regarding religious issues (Rashid & Ho, 2003). It becomes visible that religion does not have much significant impact on some of the Chinese ethnic group behaviour (Sian, 2009). This money orientation behavior might have influenced their behaviour, and discouraged them from mingling with others or even sparing more time for religious activities. Moreover, the trust and humility seemed slightly weak, while dealing with others, and reputation seemed to be not given much consideration.

The Ninth Malaysia Plan mentioned that the 'Others' ethnicity represents 1.3% of the total population of Malaysia (Department, 2006). They are mostly concentrated in Sabah and Sarawak and a minority of them live in the northern and central origins. Most of them still live in traditional jungle villages and follow different kinds of traditional religions (Mokhlis, 2006a). In the case of the interaction effect of religiosity with the 'Others' ethnicity and non-monetary factors related to knowledge sharing behaviour, the findings were not significant. The rationale behind this might be due to their different perception of religiosity in their traditional religions, principles and beliefs. Moreover, according to the data collected, most of the Others respondents were free-thinkers and were

not much committed to a particular religion. Therefore, the virtue of religiosity does not spread in their culture and community, and thus, religiosity does not influence their behaviour towards knowledge sharing. Moreover, the total number of the 'Others' respondents in this study was low. Only 23 respondents subscribed to this study, this might explain that why the result was not significant.

5.4.2 Interaction Effect of Religiosity with Gender

In answering question four, "to what extent does religiosity among different genders (male and female) moderate the relationship between non-monetary factors and knowledge sharing behaviour?" The answer will be divided into two sections. The first section will discuss the interaction of religiosity related to the male gender, while the following section will present the discussion of the interaction of religiosity with the female gender.

5.4.2.1 Interaction Effect of Religiosity with the Male Gender

In this section of the research, the discussion will be focused on the male gender. The hypothesis states that religiosity among males moderates the relationship between non-monetary factors and knowledge sharing behaviour. The findings of this study reveal that the interaction of religiosity with males and non-monetary factors was significant but negatively related to knowledge sharing behavior, which supports the hypothesis that: religiosity among the male gender moderates the relationship between non-monetary factors and knowledge sharing behaviour. These findings indicate that religious male respondents, who believe in non-monetary factors as a critical determinant for knowledge sharing behaviour, are less likely to share their knowledge with colleagues. This negative relationship might be due to competitiveness of the male gender who wants to establish their positions on their female counterparts. As Fisher and Gregoire (2006) showed in their

findings, males usually work competitively in a mixed environment (men and women) to emphasise their dominance, whereas females are less likely to behave competitively and can be classified as cooperative (Gneezy et al., 2003). The finding males may have less willingness to share their knowledge with others, is consistent with the prior study of Lin (2006c). In this study, women generally share their knowledge willingly when they maintain a positive workplace compared to males. An alternative explanation for the negative significant relationship between religiosity with males and knowledge sharing behaviour is the lack of interpersonal relationship. In this sense, Miller and Karakowsky (2005) noted that men are less concerned about interpersonal relationships, whereas, on the other side, women are more sensitive to others' ideas, opinions and knowledge. The reason why males may not share their knowledge could be due to the high concern to their ego or to hide their weaknesses from others who are seeking information. Or that it is simply incongruent with the male role, while it is different in the situation of females, who are more likely to ask for information (Miller & Karakowsky, 2005). Another reason might be male chauvinism that describes the superiority of the male (Mansbridge & Flaster, 2007). One more explanation is that men are less friendly than women. Prior studies proved that friendliness in men is less than in women (Abby, 1982). This concept has been proven by the three studies of Saal et al. (1989) and the findings of the three studies were similar in showing that men behaved less friendly compared to women.

In the findings of this study, religiosity with males and non-monetary factors was negatively but significantly related to knowledge sharing behaviour as hypothesised. Because their faith in religion was weak and they may not pay much attention to their religious roles and teachings, therefore they behaved in a different manner.

5.4.2.2 Interaction Effect of Religiosity with the Female Gender

This part of the discussion will focus on the female gender. The interaction of religiosity with females and non-monetary factors supported the hypothesis, which states that religiosity among females moderate the relationship between non-monetary factors and knowledge sharing behaviour. These findings provide further evidence to support the previous study of Landau, Björkqvist, Lagerspetz, Österman, and Gideon (2002) who reported that religiosity effects among girls are stronger than among boys. The previous studies in the field of religion, psychology and religious behaviour found that women are more religious than men due to their maternal role, and their role as the main guardian of culture, traditions, as well as religion (Landau et al., 2002). Moreover, women are more willing to share their knowledge with others (Lin, 2006a) and have more cooperation-orientated behaviour (Fisher & Gregoire, 2006). In addition, Francis and Wilcox (1998) proved that females who possess a high level of femininity are more religious than males who have low level of femininity. According to the empirical findings of Landor, Simons, Brody, and Gibbons (2011), religiosity was one of the most constructs that decreased the risk of sexual behaviour of females.

5.5 Difference between Malaysian and International Students in Terms of KSB

Question Five asks if there is a difference between Malaysian and International postgraduate students in terms of knowledge sharing behaviour. Malaysians were found to share knowledge more than International graduate students. The rationale justification of this result is that International students come from many different countries with various

cultures that might affect their knowledge sharing behavior, as they may feel like strangers among other graduate students.

Subsequent to answering the research questions, which leads us to solve the problem of the research revealed in the first chapter, the following Table 5.1 shows a comprehensive summary illustrating the interdependence and consistency among the research questions, objectives, hypotheses and findings of the present study.

Table 5.1 : Summary of the Questions, Objectives, Hypotheses and the Findings

Research Questions	Objectives	Hypotheses	Findings
1. Which non-monetary factors motivate postgraduate students to share knowledge in university?	1. To provide a better understanding of different non-monetary motivating factors that encourages knowledge sharing behaviour among postgraduate students in university.	1. There is a positive relationship between non-monetary factors and knowledge sharing behaviour.	1. The non-monetary factors include the enjoyment of helping others, reputation, self-efficacy, interpersonal trust, scholar humility and general humility. EHO, SE, INTRUST and S HUM have a positive impact towards knowledge sharing behaviour. Whereas, reputation and general humility was found insignificant towards knowledge sharing behavior.
2. What role does religiosity play in the relationship between non-monetary factors and knowledge sharing behaviour?	2. To relate religiosity role as an influential factor on knowledge sharing behaviour.	2. Religiosity moderates the relationship between non-monetary factors and knowledge sharing behavior.	2. The findings proved that religiosity moderates the relationship between all the non-monetary factors (EHO, REP, SE, INTRUST, S HUM and G HUM) and knowledge sharing behaviour.
3. To what extent does religiosity among different ethnic groups moderate the relationship between non-monetary factors and knowledge sharing behaviour?	3. To evaluate how religiosity among different ethnic groups moderate the relationship between non-monetary factors and knowledge sharing behaviour.	3. Religiosity among different ethnic groups moderates the relationship between non-monetary factors and knowledge sharing behavior.	3. Ethnic groups in Malaysia include Malays, Chinese, Indians, and Others. Religiosity among Malay and Indian ethnicity was found to have a moderating effect on the relationship between non-monetary factors and knowledge sharing behaviour. Whereas, religiosity among Chinese and Others ethnicity do not have a moderating effect on the relationship between non-monetary factors and knowledge sharing behaviour.

Table 5.1 : ‘Continued’ Summary of the Questions, Objectives, Hypotheses and the Findings

Research Questions	Objectives	Hypotheses	Findings
4. To what extent does religiosity between different gender groups moderate the relationship between non-monetary factors and knowledge sharing behaviour?	4. To assess the moderating effects of religiosity between different gender groups in the relationship between non-monetary factors and knowledge sharing behaviour.	4. Religiosity between different gender groups moderates the relationship between non-monetary factors and knowledge sharing behaviour.	4. Religiosity among males negatively moderates the relationship between non-monetary factors and knowledge sharing behaviour, while religiosity among females positively moderates the relationship between non-monetary factors and knowledge sharing behaviour.
5. Is there a difference between Malaysian and International postgraduate students in terms of knowledge sharing behaviour?	5. To identify the difference between Malaysians and International postgraduate students in terms of knowledge sharing behaviour.	5. There is a difference between Malaysian and International postgraduate students in terms of knowledge sharing behaviour.	5. The findings showed that there was a difference between Malaysian and International postgraduate students in terms of sharing knowledge and revealed that Malaysians share knowledge more than International postgraduate students.

CHAPTER SIX

CONCLUSION

6.1 Introduction

This section addresses the contribution of the study in terms of theoretical and practical implications, followed by recommendations for future research, limitations of the study and conclusion.

6.2 Summary of the Thesis

Before discussing the findings in details and highlighting the main findings, it is important to present an overview of the research. As mentioned earlier in chapter one, the main objective of this study is to give a comprehensive and thoughtful empirical study of different non-monetary factors linked to knowledge sharing behaviour. Moreover, the empirical study evaluates the effects of humility as a new construct to be added to non-monetary factors, in order to extend the predicting construct of knowledge sharing behaviour. In addition, it relates the role of religiosity as a new construct in the context of knowledge sharing behavior, and assesses its influence on the relationship between those factors and knowledge sharing behaviour. On top of that, the study evaluates whether religiosity among different ethnic and gender groups; makes any significant differences in the relationship between non-monetary factors and knowledge sharing behavior. Finally, the study distinguished between Malay and International postgraduate students in terms of knowledge sharing behaviour.

In order to accomplish this study and achieve its objectives, four theories related to knowledge sharing behaviour were combined and used to formulate the theoretical basis of this study. The theories pertaining to knowledge sharing behaviour were the social exchange theory, social cognitive theory, social capital theory and virtue theory. The assumption of these theories demonstrated that they had a strong effect on human behaviour (Bandura, 1989; Blau, 1964; Morris et al., 2005; Nahapiet & Ghoshal, 1998). These mentioned theories are believed to influence human behaviour. The outcome of this research confirms the research findings and provides evidence that non-monetary factors influence knowledge sharing behaviour.

In order to achieve the objectives of this research, an extensive literature review and empirical findings from previous studies related to knowledge sharing behaviour, non-monetary factors and religiosity were reviewed. The reviewed literature was presented in Chapter Two. Based on the mentioned theories and reviewed relevant literature, the theoretical framework was established by integrating various non-monetary factors in order to predict knowledge sharing behaviour in the presence of religiosity. There were two main themes that had been identified from the literature: One which studies the effect of non-monetary factors on knowledge sharing behaviour, and another which studies the religiosity influence on the relationship between non-monetary factors and knowledge sharing behaviour. The examination of these relationships by testing the research hypotheses will be able to answer the research questions and achieve the objectives of the study. To do so, a research methodology was employed to accomplish the aims of this study. A quantitative survey method was used to collect the primary data. The data was assembled from the six main public universities in Klang Valley, Malaysia. The data was gathered from 1,267

respondents to examine the research model. In order to analyse the data, the statistical software package for social science (SPSS version 20) was used. Furthermore, content and face validity were conducted, and valuable comments and suggestions were taken into account. And accordingly, some amendments were done.

This study tested the internal consistency reliability by using Cronbach's coefficient alpha. Exploratory factor analysis was applied to validate the measurement of the constructs used in the framework of this study, and the underlying dimensions of the data in order to determine the items that reflect a particular construct in the framework. Then, prior to the multiple linear regression, normality was used to fulfill the requirement assumption of multiple regression analysis. To test the hypotheses, the multiple regression technique was used to examine the factors that predict knowledge sharing behavior, as well as, to assess the moderating role of religiosity on the relationship between non-monetary factors and knowledge sharing behavior, whereas, the t-test technique was used to distinguish between Malaysian and International graduate students, in terms of knowledge sharing behaviour. Multicollinearity was assessed through the tolerance value and the variation of inflation factors, and no multicollinearity was detected.

The result revealed that the predictor variables, which consist of the enjoyment of helping others, self-efficacy, interpersonal trust, scholar humility and religiosity, were a significant predictor of knowledge sharing behaviour, whereas, the predictor factors reputation and general humility were not significantly related to knowledge sharing behaviour. The adjusted R^2 value was .391 and ($F = 117.283, p < 0.001$) which showed that the overall model was satisfactory where the predictor variables explained 35.7% of the

variance in the dependent variable knowledge sharing behaviour model 2 (Table 4.8). The findings of the multiple linear regression showed that the constructs – the enjoyment of helping other, self-efficacy, interpersonal trust and scholar humility - were significantly related to knowledge sharing behaviour and consistent with the results of Bock and Kim (2002), Bock et al. (2005), Wasko and Faraj (2005), Lin (2007), Kankanhalli et al. (2005) and Lin (2006).

The following elaboration will relate the findings to the theories used in this study, link it to the research questions and the hypotheses, and compare the findings with previous results of similar studies in the same area, as well as, to validate the research model.

6.3 Implications for Theory

In respect to the theoretical perspective, there are many implications. This empirical study expands on previous studies that identified and verified the core drivers (non-monetary factors) that encourage knowledge sharing behaviour of postgraduate students from the religious perspective.

The study tackled the issue of non-monetary factors in the context of postgraduate students that were not explored enough. As a result, the main contribution of this study is to formulate a theoretical framework to reflect the relationship between non-monetary factors and the behaviour of knowledge sharing. In addition, to predict knowledge sharing behaviour, the research model of this study introduced, for the first time, the humility construct to be used as one of the non-monetary factors in predicting knowledge sharing

behaviour. The relationship of the new variable to knowledge sharing behaviour could be counted as a contribution.

Based on the four combined theories (social exchange, social cognitive, social capital and virtue theory) that formulate the basis of the theoretical framework, six variables were derived from these theories and integrated together to formulate non-monetary factors in order to predict knowledge sharing behaviour. The enjoyment of helping others and reputation constructs were derived from the social exchange theory; self-efficacy was derived from the social cognitive theory; interpersonal trust was taken from the social capital theory; and humility borrowed from the theory of virtue. This integration of non-monetary factors and their effects toward knowledge sharing behaviour can be considered as another contribution, since it is not adequately covered in past studies.

Religiosity as a moderating variable was added to the theoretical framework in order to examine its effect on the relationship between non-monetary factors and knowledge sharing behaviour. This moderating relationship might be considered as a new contribution.

These theories have proven that they play an essential role in underlying knowledge sharing behaviour. The findings of this study asserts that the non-monetary factors (enjoyment of helping others, self-efficacy, interpersonal trust and scholar humility) were highly associated to knowledge sharing behaviour and consistent to prior studies, which emphasise on the positive effects of intrinsic motivation factors on knowledge sharing behaviour (Lin, 2007; Lin, 2008; Hsu, 2008; Kankanhalli et al., 2005; and Wasko & Faraj, 2005).

This study provides a theoretical expansion in the area of knowledge management and particularly in knowledge sharing behaviour. The increased attention on knowledge sharing as a critical success of knowledge management led to the investigation of this study, in order to have a better understanding of the intrinsic motivators that encourage postgraduate students to share their knowledge.

The findings were in line with the study of Kankanhalli et al. (2005) in which the intrinsic motivator was adequate to encourage individuals to share their knowledge. Moreover, the findings proved that the enjoyment of helping others, self-efficacy, interpersonal trust and scholar humility were strong motivators for graduate students to share their knowledge.

Previous research focused on the monetary rewards factors that enhance knowledge sharing among individuals (Constant et al., 1994; Bock & Kim, 2002). This study focused on the non-monetary factors that enhance knowledge sharing behaviour of individuals. The findings prove that non-monetary factors positively influenced the behaviour of knowledge sharing among postgraduate students in the context of public universities.

The non-monetary factors explained 35.7% of the variance in knowledge sharing behaviour, indicating that the current model adequately conceptualises the phenomena of knowledge sharing behaviour.

Consistent with the previous study of Devanport and Pursak (1998a), Kankanhalli et al. (2005), Wasko and Faraj (2005) and Lin (2007), the enjoyment of helping others was positively significant towards knowledge sharing behavior. The positive significant effects might be due to the altruism basis of the concept, which refers to helping others willingly

without expecting anything in return. The enjoyment of helping others increases the self-satisfaction of individuals and makes them feel good (Kankanhalli et al., 2005; Constant, Kiesler, & Sproull, 1994) and by sharing their knowledge they will be more socially-affiliated and interact with others (Bock & Kim, 2002).

Apart from the determinant construct of knowledge sharing behavior, those that did not have an impact on knowledge sharing behaviour were reputation and general humility. These two constructs do not motivate postgraduate students to share their knowledge. This issue must be given more consideration to be investigated by further research.

In addition, the research contributes to the theory of knowledge sharing behaviour by investigating the effect of the self-efficacy construct on knowledge sharing behaviour. The current empirical findings of this research reveals a better understanding of self-efficacy and its influence on knowledge sharing behaviour in the context of graduate students in public universities. The empirical investigation of self-efficacy and its positive significant influence on knowledge sharing behaviour should spark off interest to further research to use this construct as an established construct in predicting knowledge sharing behaviour. The findings of the current study also is in line with the study of Endres et al. (2007) which reveals that the context of a group of individuals is a central point in the formation of self-efficacy, and encourages them to share tacit knowledge. In addition, the findings of Compeau and Higgins (1995) revealed that self-efficacy played an essential role in constructing the feelings of individuals, as well as, their behaviour and therefore, self-efficacy is considered an important construct in social psychology and believed to influence the ability of the individual to perform certain behaviours. Moreover, the empirical findings

of this research indicated that self-efficacy had a direct effect on knowledge sharing behavior, which showed that it played an important role in leading an individual's behaviour. Lin (2007) reported that self-confidence was essential to encourage knowledge sharing with colleagues.

In contributing to the theory, interpersonal trust was investigated and proved to be the strongest predictor of knowledge sharing behavior, which implied that greater concern must be given to interpersonal trust to facilitate the social interaction among graduate students to share their knowledge easily. Therefore, such construct must be focused on for its essential role in the motivation of students to share their knowledge and to help remove the resistance barriers among graduate students to enhance the cooperation required for knowledge sharing success.

Moreover, this study enriches the area of knowledge sharing behaviour and contributes to the literature by highlighting the significant role of religiosity as a moderator in the relationship between non-monetary factors and knowledge sharing behavior, which has not been studied before in the context of knowledge sharing behaviour. The result of this study provides a new contribution to the body of knowledge by presenting and highlighting the interaction effects of religiosity on the behaviour of postgraduate students in public universities in Malaysia when sharing their knowledge, indicating that religiosity is an important construct in enhancing the intrinsic motivation of graduate students to share their knowledge. This contribution is also important for theory building in the knowledge sharing behaviour context, and as well as in other behavioural contexts.

As another contribution to the theory, the current empirical study explored the interaction effects of religiosity with the Malaysian ethnic group mainly Malay, Chinese, Indian and Others, as well as, gender groups towards knowledge sharing behaviour.

6.4 Implications for Practice

From a logical perspective, the findings of the research might have various implications on universities to promote and encourage knowledge sharing behaviour.

The findings of the study have provided various practical implications for the top management of universities to use in their strategies, plans and programmes to promote the behaviour of knowledge sharing among postgraduate students.

Firstly, knowledge sharing in higher education may basically improves and promotes the effectiveness of staff and students, and also helps in improving decision making (Howell & Annansingh, 2013). Therefore, top management should set up a suitable social environment plan to increase social interaction behaviour (Pai, 2005), such as a knowledge sharing club, scientific club or culture club, to enable postgraduate students to build a strong social relationship (Bandura, 1982) with colleagues and activate the hidden values, morality and personal characteristics to strengthen the behaviour of knowledge sharing. This social interaction could be implemented through various educational events such as lectures, talks, seminars and discussions conducted by professionals, academicians and scholars. In addition, students can be trained to practice sharing and exchanging their ideas, views, innovations and proposals to enrich their knowledge. Eventually, the result will be fruitful by the successful planting of knowledge sharing behaviour among

postgraduate students. This action enables them to create new ideas and form creative notions for new researches and studies, and enhances the competitive advantage (Liu et al., 2011) in the context of universities this would help in achieving the universities' goals to become well known research universities. This requires the commitment of top management and their strong attention to promote knowledge sharing behaviour and encourage the postgraduate students to share their knowledge with colleagues.

Secondly, top management of universities should take the initiative to promote the non-monetary factors to raise the view of knowledge sharing behaviour among postgraduate students.

Thirdly, the findings reveal that graduate students share their knowledge because they like to or feel happy when they help each other. This finding strengthens the views of Fang & Chiu (2010), Rahab et al. (2011), Lin (2007) and Yu et al. (2010) related to enjoyment of helping others, when individuals feel that their knowledge benefited others, where the altruistic value raises and increases the spirit of community among the students. Therefore, putting the altruistic values in mind is essential while developing the strategies, plans and programmes about knowledge sharing. This way it becomes possible to raise the level of the enjoyment of helping others and encourages the positive mood of social exchange, and eventually leads to motivate knowledge sharing behaviour among postgraduate students.

Fourthly, the university's top management should play a key role in imposing the social cognitive theory. The theory of social cognitive proved to be essential for enhancing individuals' self-confidence (Endres et al., 2007; Kankanhalli et al., 2005). This can be

done through introductory presentations to display the benefits and significance of self-efficacy to postgraduate students, and to activate their inner-talent. As a result, the students will be more confident and share their knowledge with other peers.

Fifthly, according to the findings of this study, interpersonal trust is an important source for social action. Interpersonal trust is proven to be the strongest variable in predicting knowledge sharing behaviour in the postgraduate student's context. Interpersonal trust is also proven to be a strong promoter of the social interrelationship (Chang & Chuang, 2011; Kacmar et al., 2012), and communication among postgraduate students, and to motivate them to share their knowledge. Furthermore, it is essential for strengthening the collaboration among individuals. This collaboration will grow gradually when students sit together and know one another through social gathering, team works, group discussions, seminars and classrooms. Thus, knowledge sharing will occur smoothly among them. Therefore, top management in universities must support and set up a good social environment, and prepare a solid ground for the social capital theory. This theory represents interpersonal trust and increases the common faith and cooperation among postgraduate students. Thus, it helps in providing the needed intrinsic motivation to unlock the potential behaviour of knowledge sharing among postgraduate students.

Sixthly, according to Vera and Lopez (2004), humility as a virtue is not an innate trait of an individual but it can be earned by learning. Rowatt et al. (2002) reported that humility is an essential key reason for continuing academic achievements and that it makes the student more open to different ideas, views and scientific discoveries. In addition, Kupfer (2003) explained that humility promotes plans and achieving worthwhile goals.

Thus, top management should instil and spread the virtue of humility among students to be a positive behaviour in the university. The findings of the current study show that scholar humility influences the knowledge sharing behaviour of graduate students. Therefore, administration should announce the importance of scholar humility and raise the virtue of humility of postgraduate students, which would increase knowledge sharing among them. Through time, scholar humility will become a culture of the students and one of their character traits which improve their knowledge sharing behaviour. This will reflect the good quality of their research and their excellent performance as a whole.

Seventhly, the findings of this research prove that religiosity has a strong impact on the postgraduate student's behaviour of knowledge sharing. A strong positive evidence of religiosity impact on human behaviour was also found in previous studies (Delener, 1990; Mokhlis, 2006a; Poulson, et al., 1998). The findings of this study would be useful for top management while setting the university strategy and plan of knowledge sharing. Thus, top management should strengthen and raise the religious commitment among students and their involvement in various religious activities to ensure better knowledge sharing behaviour. Religious activities such as religion scholar talks, public lectures, seminars, camps and group discussions, seem to be useful tools in enhancing level of religiosity among postgraduate students in universities. Therefore, top management should seek suitable mechanisms to enhance the spiritual feelings which encourage the behaviour of knowledge sharing.

Eighthly, top management should provide courses, opportunities and time to enable postgraduate students to be involved in knowledge sharing, and should include them in the educational process as a tool for promoting the knowledge sharing behaviour.

6.5 Recommendations

The current study concentrates on some factors of non-monetary motivators that enhance knowledge sharing behaviour. In the area of knowledge management and particularly in knowledge sharing behaviour, many non-monetary factors can be used in predicting knowledge sharing behaviour. Since non-monetary factors are still new in the area of knowledge sharing behaviour and based on the findings of this study, the following recommendations for further research are suggested.

More research is needed on the effects of non-monetary factors on knowledge sharing behaviour. The items of the humility construct, need to be further examined to reinvestigate other possible measurement.

More study should be done on other non-monetary factors that have an influence on knowledge sharing behaviour such as subjective norms, culture, and personality traits. The model of this study can be used in other contexts in order to provide more evidence to strengthen the significant impact of non-monetary factors on knowledge sharing behaviour in the availability of religiosity.

This study sheds light on religiosity and proves its moderating effects on the relationship between non-monetary factors and knowledge sharing behaviour. Since religiosity is a new construct in the area of knowledge sharing behavior, further investigation would be recommended to enhance and strengthen the effects of the construct.

More investigations should be conducted on the religiosity level among ethnic groups and gender. In addition religiosity could be studied in future research as an independent construct to non-monetary factors.

This study limited its respondents to graduate students. Further studies would be recommended to investigate other respondents such as professors, doctors and lecturers. There should be further examination of the relationship between non-monetary factors and knowledge sharing behaviour in the context of top management in public universities, as well as, private universities. Top managers are those who are responsible for setting and implementing university strategies, plans and programmes to improve and develop knowledge sharing behaviour inside the universities.

6.6 Limitations

The population of the current study was limited to graduate students of public universities in Klang Valley in Malaysia. The study did not include the graduate students of private universities or other respondents who have a great influence in knowledge sharing behaviour in universities such as professors, doctors and academicians. Therefore, they can be investigated in future studies.

The study focused on a few non-monetary factors that motivate knowledge sharing behaviour which explained 35.7% of the variance of the dependent variable. Therefore, future studies can investigate other factors to explain the remaining part of the variance such as subjective norm and personality traits.

The population of this study was limited to the graduate students (Master's and Doctorate). Therefore, further study should include undergraduate students.

Despite the above mentioned limitations, the findings of this study might provide a base to future research to contribute more on the aspect of non-monetary factors, knowledge sharing behaviour and religiosity. It is hoped that the findings of this study would be useful for other researchers - those who are willing to engage in similar studies and to contribute to better understanding of the predictors of knowledge sharing behaviour in the context of universities.

6.7 Conclusion

Knowledge sharing is the main key of knowledge management. Therefore, to obtain the benefit of sharing knowledge, there must be a strong knowledge-sharing system to be used. The obvious role of knowledge sharing in the success of knowledge management encourages those who care about knowledge management to find out the factors that influence knowledge sharing behaviour. The current study tries empirically to fill the gap in the literature of the non-monetary factors that predict knowledge sharing behaviour and to examine the role of religiosity in the relationship between non-monetary factors and knowledge sharing behaviour. Various constructs were combined from different theories such as the social exchange theory, social cognitive theory, social capital theory and theory of virtue, to build the model of this study to predict knowledge sharing behaviour.

The current study is quantitative in nature and uses a field survey to collect the data from 1,683 respondents. The total questionnaires used in the data analysis were 1,267 valid responses. The findings of the study supported most of the hypotheses proposed. Non-monetary factors (enjoyment of helping others, self-efficacy, interpersonal trust and scholar humility) were found positively significant towards knowledge sharing behaviour.

However, religiosity was proven to play a moderating role in the relationship between non-monetary factors and knowledge sharing behaviour. Reputation and general humility were found not to be significant to knowledge sharing behaviour. Religiosity interacted significantly with all non-monetary factors towards knowledge sharing behaviour. In addition, religiosity interacted positively with the Malay ethnic group and non-monetary factors towards knowledge sharing behaviour. In regards to the Chinese, religiosity interacted with all non-monetary factors and the findings revealed that there was no significant effect towards knowledge sharing behaviour. Furthermore, religiosity interacted positively with the Indian ethnic group and non-monetary factors towards knowledge sharing behaviour. While the interaction between religiosity and the Others ethnic group was not significant towards knowledge sharing behaviour.

The findings of this study also showed there was a difference in interaction between gender and religiosity towards knowledge sharing behaviour. The interaction of religiosity with males and non-monetary factors were found significantly but negatively related to knowledge sharing behaviour. On the other hand, the interaction of religiosity and females with non-monetary factors was found positively significant in relation to knowledge sharing behaviour.

Finally, on the comparison between Malaysian and International postgraduate students in terms of sharing knowledge, the findings revealed that Malaysian postgraduate students shared knowledge more than their International peers.

Theoretical and practical implications were highlighted based on the study findings. The study also shed light on non-monetary factors as predictors of knowledge sharing

behaviour in universities among postgraduate students in Klang Valley in Malaysia. The findings gave a better understanding of the intrinsic motivators on knowledge sharing behaviour. Also, the findings highlighted the significant role of religiosity on the relationship between non-monetary factors and knowledge sharing behaviour. Lastly, the study contributed to theory and practice. This contribution could be a useful guide for the top management of universities in drawing up their strategies, plan, and programmes to motivate the behaviour of knowledge exchange among postgraduate students.

University of Malaysia

REFERENCES

- Abbey, A. (1982). Sex differences in attributions for friendly behavior: Do males misperceive females' friendliness? *Journal of Personality and Social Psychology*, 42(5), 830-838.
- Abdulla, A. K. S. (2007). *Learning organisation: A study on the perception of organisational learning practice among Yemeni university librarians*. PhD, MARA University Technology Malaysia.
- Abrams, L. C., Cross, R., Lesser, E., & Levin, D. Z. (2003). Nurturing interpersonal trust in knowledge-sharing networks. *Academy of Management Executive*, 17(4), 64-77.
- Agarwal, N., Lim, M., & Wigand, R. T. (2011). Collective action theory meets the blogosphere: a new methodology. *Communications in Computer and Information Science*, 136(3), 224-239.
- Aguinis, H. (1995). Statistical power problems with moderated multiple regression in management research. *Journal of Management*, 21(6), 1141-1158.
- Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behaviour*. Englewood cliffs, NJ: Prentice Hall Inc.
- 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.
- Alam, S. S., Abdullah, Z., Ishak, N. A., & Zain, Z. M. (2009). Assessing knowledge sharing behaviour among employees in SMEs: An empirical study. *International Business Research*, 2(2), 115-122.
- Amato, P. R. (1981). Urban-rural differences in helping: Behavior in Australia and the United States. *The Journal of Social Psychology*, 114(2), 289-290.
- Amin, S. H. M., Zawawi, A. A., & Timan, H. (2011). *To share or not to share knowledge: Observing the factors*. Paper presented at the IEEE Colloquium on Humanities, Science and Engineering.
- Angelidis, J., & Ibrahim, N. (2004). An exploratory study of the impact of degree of religiousness upon an individual's corporate social responsiveness orientation. *Journal of Business Ethics*, 51(2), 119-128.

- Ardichvili, A., Page, V., & Wentling, T. (2003). Motivation and barriers to participation in virtual knowledge-sharing communities of practice. *Journal of Knowledge Management*, 7(1), 64-77.
- Babbie, E. R. (1986). *The practice of social research* (Fourth Edition ed.). Belmont, CA: Wadsworth Publishing Company.
- Baier, C. J., & Wright, B. R. E. (2001). "If you love me, keep my commandments": A meta-analysis of the effect of religion on crime. *Journal of Research in Crime and Delinquency*, 38(1), 3-21.
- Baker, M. J. (2001). Selecting a research methodology. *The Marketing Review*, 1(3), 373-397.
- Bakker, M., Leenders, R., Gabbay, S. M., Kratzer, J., & Van Engelen, J. M. L. (2006). Is trust really social capital? Knowledge sharing in product development projects. *The Learning Organization*, 13(6), 594-605.
- Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist*, 37(2), 122-147.
- Bandura, A. (1986). *Social foundation of thought and action: A social cognitive theory*, Englewood Cliffs, NJ: Prentice-Hall.
- Bandura, A. (1989). Social cognitive theory. *Annals of Child Development*, 6(1), 1-60.
- Bartol, K. M., & Srivastava, A. (2002). Encouraging knowledge sharing: the role of organizational reward systems. *Journal of Leadership & Organizational Studies*, 9(1), 64-76.
- Bhatt, G. D. (2001). Knowledge management in organizations: examining the interaction between technologies, techniques, and people. *Journal of Knowledge Management*, 5(1), 68-75.
- Blau, P. M. (1964). *Power and exchange in social life*. New York: J Wiley & Sons.
- 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.
- Bock, G. W., Zmud, R. W., & Kim, Y. G. (2005). Behavioral intention formation in knowledge sharing: examining the roles of extrinsic motivators, social-psychological forces, and organizational climate. *MIS Quarterly*, 29(1), 87-111.

- Borges, R. (2013). Tacit knowledge sharing between IT workers: The role of organizational culture, personality, and social environment. *Management Research Review*, 36(1), 89-108.
- Bouthillier, F., & Shearer, K. (2002). Understanding knowledge management and information management: the need for an empirical perspective. *Information Research*, 8(1), 8-1.
- Brown, T. J., & Dacin, P. A. (1997). The company and the product: corporate associations and consumer product responses. *The Journal of Marketing*, 61(1), 68-84.
- Bumiputera (Malaysia). (n.d.). In Wikipedia. (2012). Reviewed 21 September, 2012, from http://en.wikipedia.org/wiki/Bumiputera_%28Malaysia%29
- Burns, A. C., & Bush, R. F. (1999). *Marketing Research, New Jersey, USA* (3th ed.): Prentice Hall.
- Carson, D., Cilmore, A., Perry, C., & Gronhaug, K. (2001). *Qualitative Marketing Research, London, UK*: Sage Publications Ltd.
- Cavana, R. Y., Delhaye, B. L., & Sekaran, U. (2001). *Applied business research: Qualitative and quantitative method*. Milton: John willy & Sons Australia, Ltd.
- Chang, H. H., & Chuang, S.-S. (2011). Social capital and individual motivations on knowledge sharing: Participant involvement as a moderator. *Information & Management*, 48(1), 9-18.
- Chang, M.-L. (2011). *The critical factors that influence the intention of knowledge sharing among Taiwanese small and medium enterprises*. PhD, University of Maryland University College, USA.
- Chatzoglou, P. D., & Vraimaki, E. (2009). Knowledge-sharing behaviour of bank employees in Greece. *Business Process Management Journal*, 15(2), 245-266.
- Cheng, M. Y., Ho, J. S. Y., & Lau, P. M. (2009). Knowledge sharing in academic institutions: a study of Multimedia University Malaysia. *Electronic Journal of Knowledge Management*, 7(3), 313-324.
- Chennamaneni, A. (2006). *Determinants of knowledge sharing behaviors: Developing and testing an integrated theoretical model*. PhD, University of Texas at Arlington. Retrieved from <http://dspace.uta.edu/bitstream/handle/10106/305/umi-uta-1600.pdf?sequence=1>

- Choi, B., Poon, S. K., & , J. G. (2008). Effects of knowledge management strategy on organizational performance: a complementarity theory-based approach. *Omega*, 36(2), 235-251.
- Chou, S.-W. (2010). Why do members contribute knowledge to online communities? *Online Information Review*, 34(6), 829-854.
- Chua, W. F. (1986). Radical developments in accounting thought. *Accounting Review*, 61(4), 601-632.
- Chun, R. (2005). Corporate reputation: Meaning and measurement. *International Journal of Management Reviews*, 7(2), 91-109.
- Coakes, S. J., & Steed, L. (2007). *SPSS: Analysis without Anguish: Verssion 14.0 for windows*. Brisbane: John Willy & Sons Australia Ltd.
- Collins, J. (2005). Level 5 leadership: the Triumph of humility and fierce resolve. *Harvard Business Review*, 83(7/8), 136-146.
- Compeau, D., Higgins, C. A., & Huff, S. (1999). Social cognitive theory and individual reactions to computing technology: A longitudinal study. *MIS Quarterly*, 23(2), 145-158.
- Compeau, D. R., & Higgins, C. A. (1995). Computer self-efficacy: Development of a measure and initial test. *MIS Quarterly*, 19(2), 189-211.
- Connelly, C. E., & Kelloway, E. K. (2003). Predictors of employees' perceptions of knowledge sharing cultures. *Leadership & Organization Development Journal*, 24(5), 294-301.
- Constant, D., Kiesler, S., & Sproull, L. (1994). What's mine is ours, or is it? A study of attitudes about information sharing. *Information Systems Research*, 5(4), 400.
- Cooper, D. R., & Schindler, P. S. (2003). *Business Research Methods*: McGraw-Hill/Irwin New York.
- Crigger, N., & Godfrey, N. (2010). The importance of being humble. *Advances in Nursing Science*, 33(4), 310-319.
- Currie, G., & Kerrin, M. (2003). Human resource management and knowledge management: enhancing knowledge sharing in a pharmaceutical company. *International Journal of Human Resource Management*, 14(6), 1027-1045.
- Davenport, T., & Prusak, L. (1998a). Working knowledge: Managing what your organization knows. *Harvard Business School Press, Boston, MA*.

- Davenport, T. H., De Long, D. W., & Beers, M. C. (1998 b). Successful knowledge management projects. *Sloan Management Review*, 39(2), 43–57.
- Davis, J. H., Schoorman, F. D., Mayer, R. C., & Tan, H. H. (2000). The trusted general manager and business unit performance: empirical evidence of a competitive advantage. *Strategic Management Journal*, 21(5), 563-576.
- Delener, N. (1990). The effects of religious factors on perceived risk in durable goods purchase decisions. *Journal of Consumer Marketing*, 7(3), 27-38.
- Delener, N. (1994). Religious contrasts in consumer decision behaviour patterns: their dimensions and marketing implications. *European Journal of Marketing*, 28(5), 36-53.
- Department, T. E. P. U. P. M. s. (2006). *Ninth Malaysia Plan 2006-2010*, p. 238. Putrajaya: The Economic Planning Unit Prime Minister's Department. Retrieved on 31th July 2010 from <http://www.epu.gov.my/html/themes/epu/html/rm9/html/english.htm>
- Dunn, M. S. (2005). The relationship between religiosity, employment, and political beliefs on substance use among high school seniors. *Journal of Alcohol and Drug Education*, 49(1), 73-88.
- Elçi, M., Sener, İ., & Alpkan, L. (2011). *The Impact of Morality and Religiosity of Employees on Their Hardworking Behavior*. Paper presented at the Procedia-Social and Behavioral Sciences.
- Emelo, R. (2012). Why personal reputation matters in virtual knowledge sharing. *Industrial and Commercial Training*, 44(1), 35-40.
- Emmons, R. A. (2000). Is spirituality an intelligence? Motivation, cognition, and the psychology of ultimate concern. *International Journal for the Psychology of Religion*, 10(1), 3-26.
- Endres, M. L., Endres, S. P., Chowdhury, S. K., & Alam, I. (2007). Tacit knowledge sharing, self-efficacy theory, and application to the Open Source community. *Journal of Knowledge Management*, 11(3), 92-103.
- Essoo, N., & Dibb, S. (2004). Religious influences on shopping behaviour: An exploratory study. *Journal of Marketing Management*, 20(7), 683-712.
- Estephen, A. S. (2005). *The relationship between marital humility, marital communication, and marital satisfaction* PhD, Texas Southern University, Texas.
- Exline, J. J., & Geyer, A. L. (2004). Perceptions of humility: A preliminary study. *Self and Identity*, 3(2), 95-114.

- Fang, Y.-H., & Chiu, C.-M. (2010). In justice we trust: Exploring knowledge-sharing continuance intentions in virtual communities of practice. *Computers in Human Behavior*, 26(2), 235-246.
- Fathi, N. M., Eze, U. C., & Goh, G. G. G. (2011). Key determinants of knowledge sharing in an electronics manufacturing firm in Malaysia. *Library Review*, 60(1), 53-67.
- Fisher, R. J., & Grégoire, Y. (2006). Gender differences in decision satisfaction within established dyads: Effects of competitive and cooperative behaviors. *Psychology and Marketing*, 23(4), 313-333.
- Fowler, P. J., Ahmed, S. R., Tompsett, C. J., Jozefowicz-Simbeni, D. M., & Toro, P. A. (2008). Community violence and externalizing problems: Moderating effects of race and religiosity in emerging adulthood. *Journal of Community Psychology*, 36(7), 835-850.
- Francis, L. J., & Wilcox, C. (1998). Religiosity and femininity: Do women really hold a more positive attitude toward Christianity? *Journal for the Scientific Study of Religion*, 37(3), 462-469.
- Gist, M. E., & Mitchell, T. R. (1992). Self-efficacy: A theoretical analysis of its determinants and malleability. *Academy of Management Review*, 17(2), 183-211.
- Gneezy, U., & Rustichini, A. (2004). Gender and competition at a young age. *The American Economic Review*, 94(2), 377-381.
- Grapentine, T. (1997). Managing multicollinearity. *Marketing Research*, 9(3), 10-21.
- Gupta, B., Iyer, L. S., & Aronson, J. E. (2000). Knowledge management: practices and challenges. *Industrial Management & Data Systems*, 100(1), 17-21.
- Hair, Black, Babin, Anderson, & Tatham. (2006). *Multivariate Data Analysis*. New Jersey, USA: Pearson Education, Inc.
- Hartzel, K. (2003). How self-efficacy and gender issues affect software adoption and use. *Communication of the ACM*, 46(9), 167-171.
- Hau, Y. S., Kim, B., Lee, H., & Kim, Y.-G. (2013). The effects of individual motivations and social capital on employees' tacit and explicit knowledge sharing intentions. *International Journal of Information Management*, 33(2), 356-366.
- Hendriks, P. (1999). Why share knowledge? The influence of ICT on the motivation for knowledge sharing. *Knowledge and Process Management*, 6(2), 91-100.

- Heydari, A. R., Armesh, H., Behjat, S., & Manafi, M. (2011). Determinant of incentive factors in knowledge sharing. *Interdisciplinary Journal of Contemporary Research in Business*, 3(1), 83-95.
- Hicks, J. A., & King, L. A. (2008). Religious commitment and positive mood as information about meaning in life. *Journal of Research in Personality*, 42(1), 43-57.
- Holy-Qur'an. Interpretation of the meanings of the Noble Qur'an in the English language. Retrieved on 19th July 2012, from <http://quran.com/>.
- Hopkins, K. D., Hopkins, B. R., & Glass, G. V. (1996). *Basic statistics for the behavioral sciences*, Needham Heights, MA, USA: Allyn & Bacon.
- Howell, K. E., & Annansingh, F. (2013). Knowledge generation and sharing in UK universities: A tale of two cultures? *International Journal of Information Management*, 33(1), 32-39.
- Hsu, C. L., & Lin, J. C. C. (2008). Acceptance of blog usage: The roles of technology acceptance, social influence and knowledge sharing motivation. *Information & Management*, 45(1), 65-74.
- Hsu, I. C. (2006). Enhancing employee tendencies to share knowledge—Case studies of nine companies in Taiwan. *International Journal of Information Management*, 26(4), 326-338.
- Hsu, M. H., Ju, T. L., Yen, C. H., & Chang, C. M. (2007). Knowledge sharing behavior in virtual communities: the relationship between trust, self-efficacy, and outcome expectations. *International Journal of Human-Computer Studies*, 65(2), 153-169.
- Hung, S. Y., & Liang, T. P. (2001). Effect of computer self-efficacy on the use of executive support systems. *Industrial Management and Data Systems*, 101(5), 227-236.
- Hung, S.-Y., Durcikova, A., Lai, H.-M., & Lin, W.-M. (2011). The influence of intrinsic and extrinsic motivation on individuals' knowledge sharing behavior. *International Journal of Human-Computer Studies*, 69(6), 415-427.
- Huotari, M. L., & Iivonen, M. (2004). Trust in knowledge management and systems in organizations. *Information management*, 17(1/2), 10-12.
- Huotari, M. L., & Iivonen, M. (2004). *Trust in knowledge management and systems in organizations*. Hershey, PA: Idea Group Publishing.
- Hutchinson, D. S. (1986). *The virtues of Aristotle*: Routledge Kegan & Paul, London and New York.

- Hwang, Y. (2012). Understanding moderating effects of collectivist cultural orientation on the knowledge sharing attitude by email. *Computers in Human Behavior*, 28(6), 2169-2174.
- Ibrahim, N. A., & Angelidis, J. P. (2005). The long-term performance of small businesses: are there differences between “Christian-based” companies and their secular counterparts? *Journal of Business Ethics*, 58(1-3), 187-193.
- Jager, M. (1999). The KMAT: benchmarking knowledge management. *Library Management*, 20(7), 367-372.
- Jain, P. (2007). An empirical study of knowledge management in academic libraries in East and Southern Africa. *Library Review*, 56(5), 377-392.
- Jang Hwan Lee, Young Gul Kim, & Kim, M. Y. (2006). Effects of managerial drivers and climate maturity on knowledge management performance: Empirical validation. *Information Resources Management*, 19(3), 48-60.
- Johnston, L. D. (1980). *Review of general population surveys of drug abuse*: World Health Organization, reviewed on 4th July 2012, http://whqlibdoc.who.int/offset/WHO_OFFSET_52.pdf.
- Johnston, L. D., & O'Malley, P. M. (1985). Issues of validity and population coverage in student surveys of drug use. *NIDA Research Monogr*, 57(4), 31-54.
- Kacmar, K. M., Bachrach, D. G., Harris, K. J., & Noble, D. (2012). Exploring the role of supervisor trust in the associations between multiple sources of relationship conflict and organizational citizenship behavior. *Leadership Quarterly*, 23(1), 43-54.
- Kankanhalli, A., Tan, B. C. Y., & Wei, K. K. (2005). Contributing knowledge to electronic repositories: an empirical investigation. *MIS Quarterly*, 29(1), 113–143.
- Kaplan, K. J., Dodge, N., Wallrabenstein, I., Thiel, K., Ficker, L., Laird, P., . . . Shchesyuk, M. (2008). Zenoism, depression and attitudes toward suicide and physician-assisted suicide: The moderating effects of religiosity and gender. *Ethics & Medicine*, 24(3), 167-188,131.
- Kiffin-Petersen, S. A., & Cordery, J. L. (2003). Trust, individualism and job characteristics as predictors of employee preference for teamwork. *The International Journal of Human Resource Management*, 14(1), 93-116.
- Kilroy, J. J. (2009). *Development of seven leadership behavior scales based upon the seven leadership values inspired by the beatitudes*. PhD, Regent University.

- Kim, S., & Ju, B. (2008). An analysis of faculty perceptions: Attitudes toward knowledge sharing and collaboration in an academic institution. *Library & Information Science Research, 30*(4), 282-290.
- Klang Valley. (n. d.). In Wikipedia. Reviewed 9 November, 2010 from http://en.wikipedia.org/wiki/klang_Valley
- Klenke, K. (2005). Corporate values as multi-level, multi-domain antecedents of leader behaviors. *International Journal of Manpower, 26*(1), 50-66.
- Kohn, A. (1993). Why incentive plans cannot work. *Harvard Business Review, 71*(5), 54-60.
- Koning, J. W. (1993). Three other R's: Recognition, reward and resentment. *Research Technology Management, 36*, 19-19.
- Korn, L., & Zukerman, G. (2011). Affective and behavioral changes following exposure to traumatic events: the moderating effect of religiosity on avoidance behavior among students studying under a high level of terror event exposure. *Journal of Religion and Health, 50*(4), 911-921.
- Kuo, F. Y., & Young, M. L. (2008). Predicting knowledge sharing practices through intention: A test of competing models. *Computers in Human Behavior, 24*(6), 2697-2722.
- Kupfer, J. (2003). The moral perspective of humility. *Pacific Philosophical Quarterly, 84*(3), 249-269.
- Lakhani, K. R., & Von Hippel, E. (2003). How open source software works. *Research Policy, 32*(6), 923-943.
- Landau, S. F., Björkqvist, K., Lagerspetz, K. M. J., Österman, K., & Gideon, L. (2002). The effect of religiosity and ethnic origin on direct and indirect aggression among males and females: Some Israeli findings. *Aggressive Behavior, 28*(4), 281-298.
- Landor, A., Simons, L. G., Simons, R. L., Brody, G. H., & Gibbons, F. X. (2011). The role of religiosity in the relationship between parents, peers, and adolescent risky sexual behavior. *Journal of Youth and Adolescence, 40*(3), 296-309.
- Langfred, C. W. (2007). The downside of self-management: A longitudinal study of the effects of conflict on trust, autonomy, and task interdependence in self-managing teams. *The Academy of Management Journal (AMJ), 50*(4), 885-900.

- Lappin, A. K., Brandt, Y., Husak, J. F., Macedonia, J. M., & Kemp, D. J. (2006). Gaping displays reveal and amplify a mechanically based index of weapon performance. *The American Naturalist*, 168(1), 100-113.
- Lee, A. S. (1991). Integrating positivist and interpretive approaches to organizational research. *Organization Science*, 2(4), 342-365.
- Lee, G., Lee, W. J., & Sanford, C. (2011). A motivational approach to information providing: A resource exchange perspective. *Computers in Human Behavior*, 27(1), 440-448.
- Lee, H., & Choi, B. (2003a). Knowledge management enablers, processes, and organizational performance: An integrative view and empirical examination. *Journal of Management Information Systems*, 20(1), 179-228.
- Lee, J. H., Kim, Y. G., & Kim, M. Y. (2006a). Effects of managerial drivers and climate maturity on knowledge-management performance: Empirical validation. *Innovative Technologies for Information Resources Management*, 19(3), 48-60.
- Lee, J. N. (2001). The impact of knowledge sharing, organizational capability and partnership quality on IS outsourcing success. *Information & Management*, 38(5), 323-335.
- Lee, J. N., Huynh, M. Q., & Hirschheim, R. (2008). An integrative model of trust on IT outsourcing: Examining a bilateral perspective. *Information Systems Frontiers*, 10(2), 145-163.
- Lee, K., Gizzarone, M., & Ashton, M. C. (2003b). Personality and the likelihood to sexually harass. *Sex Roles*, 49(1), 59-69.
- Lee, M. K. O., Cheung, C. M. K., Lim, K. H., & Sia, C. L. (2006b). Understanding customer knowledge sharing in web-based discussion boards. *Internet Research*, 16(3), 289-303.
- Lin, C. P. (2006 c). Gender differs: Modelling knowledge sharing from a perspective of social network ties. *Asian Journal of Social Psychology*, 9(3), 236-241.
- Lin, H. F. (2006a). Impact of organizational support on organizational intention to facilitate knowledge sharing. *Knowledge Management Research & Practice*, 4(1), 26-35.
- Lin, H. F. (2007). Knowledge sharing and firm innovation capability: an empirical study. *International Journal of Manpower*, 28(3/4), 315-332.
- Lin, H. F., & Lee, G. G. (2004). Perceptions of senior managers toward knowledge-sharing behaviour. *Management Decision*, 42(1), 108-125.

- Lin, H. F., & Lee, G. G. (2006b). Effects of socio-technical factors on organizational intention to encourage knowledge sharing. *Management Decision*, 44(1), 74-88.
- Lin, T.-C., Wu, S., & Lu, C.-T. (2012). Exploring the affect factors of knowledge sharing behavior: The relations model theory perspective. *Expert Systems with Applications*, 39(1), 751-764.
- Liss, K. (1999). Do we know how to do that? Understanding knowledge management. *Harvard Management Update*, 4(2), 1-4.
- Liu, P., Raahemi, B., & Benyoucef, M. (2011). Knowledge sharing in dynamic virtual enterprises: A socio-technological perspective. *Knowledge-Based Systems*, 24(3), 427-443.
- Luna-Reyes, L. F., Cresswell, A. M., & Richardson, G. P. (2004). *Knowledge and the development of interpersonal trust: A dynamic model*. Paper presented at the Proceedings of the 37th Hawaii International Conference on System Sciences, Hawaii.
- Luthans, F., & Peterson, S. J. (2002). Employees engagement and manager self-efficacy: implications for managerial effectiveness and development. *Journal of Management Development*, 21(5), 376-387.
- Ma, Z., Qi, L., & Wang, K. (2008). Knowledge sharing in Chinese construction project teams and its affecting factors: An empirical study. *Chinese Management Studies*, 2(2), 97-108.
- Malhotra, N. K. (2007). *Marketing Reseatrch*. New Jersey: Pearson Education, Inc., Upper Saddle River.
- Mansbridge, J., & Flaster, K. (2007). The cultural politics of everyday discourse: The case of "male chauvinist". *Critical Sociology*, 33(4), 627-660.
- Mattila, A. S., Apostolopoulos, Y., Sonmez, S., Yu, L., & Sasidharan, V. (2001). The impact of gender and religion on college students' spring break behavior. *Journal of Travel Research*, 40(2), 193-200.
- McDermott, R. (1999). Why information technology inspired but cannot deliver knowledge management. *California Management Review*, 41(4), 103-117.
- McNeish, J., & Singh Mann, I. J. (2010). Knowledge sharing and trust in organizations. *IUP Journal of Knowledge Management*, 8(1&2), 18-38.

- Means, J. R., Wilson, G. L., Sturm, C., Biron, J. E., & Bach, P. J. (1990). Humility as a psychotherapeutic formulation. *Counselling Psychology Quarterly*, 3(2), 211-215.
- Miller, D. L., & Karakowsky, L. (2005). Gender influences as an impediment to knowledge sharing: when men and women fail to seek peer feedback. *The Journal of Psychology: Interdisciplinary and Applied*, 139(2), 101-118.
- Milne, P. (2007). Motivation, incentives and organisational culture. *Journal of Knowledge Management*, 11(6), 28-38.
- MMHE. (2008). *Malaysian higher education statistics*, p. 20, Planning and Research Ministry of Higher Education Malaysia Retrieved on 19th July 2010 from http://www.mohe.gov.my/web_statistik/Buku_Perangkaan_2008.pdf.
- Mokhlis, S. (2006b). *The influence of religion on retail patronage behaviour in Malaysia*. Phd, University of Stirling.
- Mokhlis, S. (2006a). The effect of religiosity on shopping orientation: an exploratory study in Malaysia. *Journal of American Academy of Business, Cambridge*, 9(1), 64-74.
- Morgan, G. A., & Griego, O. V. (1998). *Easy use and interpretation of SPSS for Windows: answering research questions with statistics*: Lawrence Erlbaum Associates.
- Morris, J. A., Brotheridge, C. M., & Urbanski, J. C. (2005). Bringing humility to leadership: Antecedents and consequences of leader humility. *Human Relations*, 58(10), 1323-1350.
- Muhamad, R. (2009). Religiosity, ethical judgments and Malaysian Muslim students. *Journal of Business Systems, Governance and Ethics*, 4(1), 53-64.
- Nahapiet, J., & Ghoshal, S. (1998). Social capital, intellectual capital, and the organizational advantage. *Academy of Management Review*, 23(2), 242-266.
- Narasimha, S. (2000). Organizational knowledge, human resource management, and sustained competitive advantage: Toward a framework. *Journal of Global Competitiveness*, 10(1), 123-135.
- Nardi, P. M. (2006). *Interpreting Data: A Guide to Understanding Research*. Boston: Pearson Education, Inc.
- Neuman, W. L. (2007). *Basics of Social Research : Qualitative and Quantitative Approaches*, Boston, USA, Pearson Education.
- Nonaka, I. (1991). The knowledge-creating company. *Harvard Business Review*, 69(6), 96-104.

- Nonaka, I. (1994). A dynamic theory of organizational knowledge creation. *Organization Science*, 5(1), 14-37.
- Nonaka, I., Reinmoeller, P., & Senoo, D. (1998). The ART'of knowledge: Systems to capitalize on market knowledge. *European Management Journal*, 16(6), 673-684.
- Nonaka, I., Toyama, R., & Konno, N. (2000). SECI, Ba and leadership: a unified model of dynamic knowledge creation. *Long Range Planning*, 33(1), 5-34.
- Noor, N. M., & Salim, J. (2011). Factors influencing employee knowledge sharing capabilities in electronic government agencies in Malaysia. *International Journal of Computer Science*, 8(4), 106-114.
- O'Dell, C., & Grayson, C. J. (1998). If only we knew what we know: identification and transfer of internal best practices. *California Management Review*, 40(3), 154-174.
- Olatokun, W., & Nwafor, C. I. (2012). The effect of extrinsic and intrinsic motivation on knowledge sharing intentions of civil servants in Ebonyi State, Nigeria. *Information Development*, 28(3), 216-234.
- Ong, F. S., & Moschis, G. P. (2006). Religiosity and consumer behavior: a crosscultural study. Retrieved 12th Aug 2012
http://scholar.google.com.my/scholar?hl=en&q=Ong+fon+sim+and+Moschis&as_sdt=0%2C5&as_ylo=&as_vis=0
- Orlikowski, W., & Baroudi, J. J. (1991). Studying information technology in organizations: Research approaches and assumptions. *Information Systems Research*, 2(1), 1-28.
- Osterloh, M., & Frey, B. S. (2000). Motivation, knowledge transfer, and organizational forms. *Organization Science*, 11(5), 538-550.
- Ostwald, M. (1962a). *Aristotle: Nicomachean Ethics*, Indianapolis, New York, Bobbs-Merrill.
- Ostwald, M. (1962b). *Nicomachean ethics*, Indianapolis, New York.: MacMillan Publishing Company.
- Pai, J. C. (2006). An empirical study of the relationship between knowledge sharing and IS/IT strategic planning (ISSP). *Management Decision*, 44(1), 105-122.
- Pallant, J. (2007). *SPSS survival manual: Astep by step guide to data analysis using SPSS for windows*. Berkshire England: Open University Press, Mc Graw Hill.

- Papadopoulos, T., Stamati, T., & Nopparuch, P. (2013). Exploring the determinants of knowledge sharing via employee weblogs. *International Journal of Information Management, 33*(1), 133-146.
- Parirokh, M., Daneshgar, F., & Fattahi, R. (2008). Identifying knowledge-sharing requirements in academic libraries. *Library Review, 57*(2), 107-122.
- Politis, J. D. (2003). The connection between trust and knowledge management: what are its implications for team performance. *Journal of Knowledge Management, 7*(5), 55-66.
- Poulson, R. L., Eppler, M. A., Satterwhite, T. N., Wuensch, K. L., & Bass, L. A. (1998). Alcohol consumption, strength of religious beliefs, and risky sexual behavior in college students. *Journal of American College Health, 46*(5), 227-232.
- Quintas, P., Lefere, P., & Jones, G. (1997). Knowledge management: a strategic agenda. *Long Range Planning, 30*(3), 322-391.
- Rahab, Sulistyandari, & Sudjono. (2011). The development of innovation capability of small and medium enterprises through knowledge sharing process: An empirical study of Indonesian creative industry *International Journal of Business & Social Science, 2*(21), 112-123.
- Rashid, M. Z. A., & Ho, J. A. (2003). Perceptions of business ethics in a multicultural community: The case of Malaysia. *Journal of Business Ethics, 43*(1/2), 75-87.
- Renzl, B. (2008). Trust in management and knowledge sharing: The mediating effects of fear and knowledge documentation. *Omega, 36*(2), 206-220.
- Rousseau, D. M., Sitkin, S. B., Burt, R. S., & Camerer, C. (1998). Not so different after all: A cross-discipline view of trust. *Academy of Management Review, 23*(3), 393-404.
- Rowatt, W. C., Ottenbreit, A., Nesselroade Jr, K. P., & Cunningham, P. A. (2002). On being holier-than-thou or humbler-than-thee: A social-psychological perspective on religiousness and humility. *Journal for the Scientific Study of Religion, 41*(2), 227-237.
- Rowden, T. (2009). *Humility as catalyst of client change: a delphi study*. PhD, Texas Tech University.
- Ryan, R. M., & Deci, E. L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology, 25*(1), 54-67.
- Ryu, S., Ho, S. H., & Han, I. (2003). Knowledge sharing behavior of physicians in hospitals. *Expert Systems with Applications, 25*(1), 113-122.

- Saal, F. E., Johnson, C. B., & Weber, N. (1989). Friendly or sexy?: It may depend on whom you ask. *Psychology of Women Quarterly*, 13(3), 263-276.
- Sahin, I. (2005). Understanding faculty adoption of technology using the learning/adoption trajectory model: A qualitative case study. *The Turkish Online Journal of Educational Technology*, 4(1), 75-84.
- Sandage, S. J., & Wiens, T. W. (2001). Contextualizing models of humility and forgiveness: A reply to Gassin. *Journal of Psychology and Theology*, 29(3), 201-211.
- Sarros, J. C., Cooper, B. K., & Hartigan, A. M. (2006). Leadership and character. *Leadership & Organization Development Journal*, 27(8), 682-699.
- Sharratt, M., & Usoro, A. (2003). Understanding knowledge-sharing in online communities of practice. *Electronic Journal of Knowledge Management*, 1(2), 187-196.
- Sherman, N. (1991). *The fabric of character: Aristotle's theory of virtue*: Oxford University Press, USA.
- Sian, L. F. (2009). *An Investigation into the Impact of Income, Culture and Religion on Consumption Behaviour: A Comparative Study of the Malay and the Chinese Consumers in Malaysia*. PhD, University of Exeter.
- Singhapakdi, A., Marta, J. K., Rallapalli, K. C., & Rao, C. (2000). Toward an understanding of religiousness and marketing ethics: An empirical study. *Journal of Business Ethics*, 27(4), 305-319.
- Singhapakdi, A., Rawwas, M. Y. A., Marta, J. K., & Ahmed, M. I. (1999). A cross-cultural study of consumer perceptions about marketing ethics. *Journal of Consumer Marketing*, 16(3), 257-272.
- Skyrme, D., & Amidon, D. (1997). The knowledge agenda. *Journal of Knowledge Management*, 1(1), 27-37.
- Smith, E. A. (2001). The role of tacit and explicit knowledge in the workplace. *Journal of Knowledge Management*, 5(4), 311-321.
- Sohail, M. S., & Daud, S. (2009). Knowledge sharing in higher education institutions: Perspectives from Malaysia. *The Journal of Information and Knowledge Management Systems*, 39(2), 125-142.

- Sood, J., & Nasu, Y. (1995). Religiosity and nationality: An exploratory study of their effect on consumer behavior in Japan and the United States. *Journal of Business Research*, 34(1), 1-9.
- Suh, A. (2013). The influence of self-discrepancy between the virtual and real selves in virtual communities. *Computers in Human Behavior*, 29(1), 246-256.
- Suhaimee, S., Abu bakar, A. Z., Alias, & A., R. (2006). *knowledge sharing culture in Malaysian public institution of higher education: An overview*. Proceedings of the Postgraduate Annual Research Seminar, PARS, UTM Skudai.
- Suliman, A. M., & Abdulla, M. H. (2005a). Towards a high-performance workplace: managing corporate climate and conflict. *Management Decision*, 43(5/6), 720-733.
- Suliman, A. M., & Abdulla, M. H. (2005b). Towards a high-performance workplace: managing corporate climate and conflict. *Management Decision*, 43(5), 720-733.
- Susanty, A. I., & Wood, P. C. (2011). *The motivation to share knowledge of the employees in the telecommunication service providers in Indonesia* Paper presented at the International Conference on Social Science and Humanity, Singapore.
- Tangney, I. P. (2000). Humility: Theoretical perspectives, empirical findings and directions for future research. *Journal of Social and Clinical Psychology*, 19(1), 70-82.
- Teimouri, H., Emami, S., & Hamidipour, S. (2011). Studying the effective organizational factors on knowledge sharing between employees of governmental organizations in Isfahan province, Iran. *Interdisciplinary Journal of Contemporary Research in Business*, 3(5), 921-931.
- Tervalon, M., & Murray-Garcia, J. (1998). Cultural humility versus cultural competence: a critical distinction in defining physician training outcomes in multicultural education. *Journal of Health Care for the Poor and Underserved*, 9(2), 117-125.
- Ticehurst, G. W., & Veal, A. J. (2000). *Business research methods: A managerial approach*: Pearson Education Australia.
- Timberlake, D. S., Rhee, S. H., Haberstick, B. C., Hopfer, C., Ehringer, M., Lessem, J. M., . . . Hewitt, J. K. (2006). The moderating effects of religiosity on the genetic and environmental determinants of smoking initiation. *Nicotine & Tobacco Research*, 8(1), 123-133.
- Tohidinia, Z., & Mosakhani, M. (2010). Knowledge sharing behaviour and its predictors. *Industrial Management & Data Systems*, 110(4), 611-631.
- Truch, E. (2001). Trust in knowledge sharing. *Knowledge Management*, Jul/Aug, P32, 1p.

- van den Hooff, B., & Ridder, J. A. (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.
- van Donk, D. P., & Riezebos, J. (2005). Exploring the knowledge inventory in project-based organisations: a case study. *International Journal of Project Management*, 23(1), 75-83.
- Vera, D., & Rodriguez-Lopez, A. (2004). Strategic virtues: Humility as a source of competitive advantage. *Organizational Dynamics*, 33(4), 393-408.
- Vithessonthi, C. (2008). Social interaction and knowledge sharing behaviors in multinational corporations. *The Business Review, Cambridge*, 10(2), 324-331.
- Vuori, V., & Okkonen, J. (2012). Knowledge sharing motivational factors of using an intra-organizational social media platform. *Journal of Knowledge Management*, 16(4), 592-603.
- Wagner, C. (2004). A technology for conversational knowledge management and group collaboration. *Communications of the Association for Information Systems*, 13(19), 265-289.
- Wang, S., & Noe, R. A. (2010). Knowledge sharing: A review and directions for future research. *Human Resource Management Review*, 20(2), 115-131.
- Wasko, M., & Faraj, S. (2000). "It is what one does": why people participate and help others in electronic communities of practice. *The Journal of Strategic Information Systems*, 9(2), 155-173.
- Wasko, M. M. L., & Faraj, S. (2005). Why should I share? Examining social capital and knowledge contribution in electronic networks of practice. *MIS Quarterly*, 29(1), 35-57.
- Weaver, G. R., & Agle, B. R. (2002). Religiosity and ethical behavior in organizations: A symbolic interactionist perspective. *Academy of Management Review*, 27(1), 77-97.
- Wei, C. C., Choy, C. S., Chew, G. G., & Yen, Y. Y. (2012). Knowledge sharing patterns of undergraduate students. *Library Review*, 61(5), 327-344.
- Wiig, K. M. (1997). Knowledge management: where did it come from and where will it go? *Expert Systems with Applications*, 13(1), 1-14.

- Worthington Jr, E. L., Wade, N. G., Hight, T. L., McCullough, M. E., Berry, J. T., Ripley, J. S., . . . O'Connor, L. (2003). The religious commitment inventory—10: Development, refinement, and validation of a brief scale for research and counseling. *Journal of Counseling Psychology, 50*(1), 84-96.
- Wu, W. L., Lin, C. H., Hsu, B. F., & Yeh, R. S. (2009). Interpersonal trust and knowledge sharing: Moderating effects of individual altruism and a social interaction environment. *Social Behavior and Personality: an international journal, 37*(1), 83-93.
- Wu, W.-y., & Sukoco, B. M. (2010). Why should I share? Examining consumers' motives and trust on knowledge sharing *Journal of Computer Information Systems, 50*(4), 11-19.
- Yang, S. B. (2006). *The Diffusion and Effectiveness of Self-Managed Work Teams (SMWTs) in Municipal Management: A Combined Model of Institutional and Behavioral Approaches*. PhD, Florida State University. Retrieved from <http://diginole.lib.fsu.edu/cgi/viewcontent.cgi?article=5165&context=etd> on 27th September 2011
- Yi, J. (2009). A Measure of Knowledge Sharing Behavior: Scale Development and Validation. *Knowledge Management Research and Practice, 7*(1), 65-81.
- Yu, T.-K., Lu, L.-C., & Liu, T.-F. (2010). Exploring factors that influence knowledge sharing behavior via weblogs. *Computers in Human Behavior, 26*(1), 32-41.
- Zamiri, M., & Baqutayan, S. M. S. (2012). Are We Willing to Share Knowledge Through Computer? . *International Research Journal of Computer Science Engineering and Applications, 11*(1), 8-13.
- Zarraga, C., & Bonache, J. (2003). Assessing the team environment for knowledge sharing: An empirical analysis. *International Journal of Human Resource Management, 14*(7), 1227-1245.
- Zawawi, A. A., Zakaria, Z., Kamarunzaman, N. Z., Noordin, N., Sawal, M. Z. H. M., Junos, N. M., & Najid, N. S. A. N. (2011). The study of barrier factors in knowledge sharing: A case study in public university. *Management Science and Engineering, 5*(1), 59-70.
- Zhang, P., & Ng, F. F. (2013). Explaining Knowledge-Sharing Intention in Construction Teams in Hong Kong. *Journal of Construction Engineering & Management, 139*(3), 280-293.

Zhang, X., Pablos, P. O. d., & Zhou, Z. (2013). Effect of knowledge sharing visibility on incentive-based relationship in Electronic Knowledge Management Systems: An empirical investigation. *Computers in Human Behavior*, 29(2), 307-313.

Zhang, Z., & Sundaresan, S. (2010). Knowledge markets in firms: knowledge sharing with trust and signalling. *Knowledge Management Research & Practice*, 8(4), 322-339.

Zikmund, W. G. (2000). *Business Research Method*. United State of America: Harcourt Inc.

University of Malaya