

**KNOWLEDGE SHARING BEHAVIOR AMONG ACADEMIC STAFF
OF UNIVERSITI UTARA MALAYSIA**

A research project submitted to the College of Business
in partial fulfillment of the requirement for the degree
Master of Science (Management)
Universiti Utara Malaysia

By

NUR SYAZWANI BINTI MOHD NAWI

2009

PERMISSION TO USE

In presenting this thesis in partial fulfillment of the requirements for a postgraduate degree from Universiti Utara Malaysia, I agree that the University Library may make it freely available for inspection. I further agree that permission of copying of this thesis in any manner, in whole or in part, for scholarly purpose may be granted by my supervisor or, in her absence, by the Dean of Research and Innovation. It is understood that any copying or publication or use of this thesis or parts thereof for financial gain shall not be allowed without my written permission. It is also understood that due recognition shall be given to me and to Universiti Utara Malaysia for any scholarly use which may be made of any material from my thesis.

Request for permission to copy or to make other use of materials in this thesis, in whole or in part, should be addressed to:

**DEAN OF RESEARCH AND INNOVATION,
COLLEGE OF BUSINESS (COB)
UNIVERSITI UTARA MALAYSIA
06010 UUM SINTOK
KEDAH DARUL AMAN**

ABSTRACT

This study was implementing Theory of Planned Behavior (TPB) to study knowledge sharing behavior among academic staffs of Universiti Utara Malaysia (UUM). The main objective of this study was threefold. First, the study was to examine the relationship between attitude, subjective norm and perceived behavioral control with knowledge sharing behavior. Second, it was to determine whether intention plays a mediating role in this relationship. Third, was to find out the relationship between intention and knowledge sharing behavior. A total of 250 questionnaires were distributed to academic staffs from three (3) academic colleges which are College of Business (COB), College of Arts and Sciences (CAS) and College of Law, Government and International Studies (COLGIS). However, only 98 were returned and usable for analysis. Hierarchical regression analysis was performed to tests the hypotheses of the study. The results indicated that of the three (3) components of TPB, only attitude and perceived behavioral control were positively and significantly related to knowledge sharing behavior. However, the regression analysis showed that only attitude was significant predictors of intention. It was found that, intention was not a mediator in the relationship between perceived behavioral control and knowledge sharing behavior. The findings were discussed and recommendations for the future research were also addressed.

ABSTRAK

Kajian ini menggunakan Teori Gelagat Terancang (TPB) untuk menjalankan kajian terhadap gelagat perkongsian pengetahuan di antara staf akademik Universiti Utara Malaysia (UUM). Kajian ini mempunyai tiga (3) objektif utama. Pertama, untuk melihat hubungan antara sikap, norma subjektif dan kawalan gelagat dengan gelagat perkongsian pengetahuan. Kedua, untuk menentukan sama ada niat gelagat memainkan peranan sebagai agen pertengahan di dalam perhubungan tersebut. Tiga, untuk melihat hubungan di antara niat gelagat dan gelagat perkongsian pengetahuan. Sejumlah 250 soalan kajian selidik diedarkan kepada staf akademik dari tiga (3) kolej akademik iaitu Kolej Perniagaan (COB), Kolej Sastera dan Sains (CAS) dan Kolej Undang-undang, Kerajaan dan Pengajian Antarabangsa (COLGIS). Walaubagaimanapun, hanya sebanyak 98 soalan kajian soal selidik yang dipulangkan dan boleh digunakan untuk melaksanakan analisis kajian. Analisis Hierarki Regresi dilakukan untuk menguji semua hipotesis kajian. Hasil kajian menunjukkan, dari tiga (3) komponen teori (TPB), hanya sikap dan kawalan gelagat sahaja yang mempunyai hubungan positif dan signifikasi dengan gelagat perkongsian pengetahuan. Walaubagaimanapun, analisis regresi menunjukkan hanya sikap yang mempunyai hubungan signifikasi dengan niat gelagat. Analisis juga menunjukkan niat gelagat bukan merupakan pengantara bagi hubungan kawalan gelagat dan gelagat perkongsian pengetahuan. Perbincangan tentang dapatan kajian dan saranan untuk kajian yang akan datang juga diberikan.

ACKNOWLEDGEMENTS

In the name of Allah, the most gracious and most merciful

I am so thankful to Allah for giving me the courage and strength to complete this study. This research project was made possible with the help and support of many people which I must acknowledge. Firstly, I am sincerely much indebted to my academic supervisor, Dr Siti Norezam Othman who has given in valuable advice and guidance throughout the preparation of this study. Special thanks to Miss Norkhazzaina Salahuddin and Mrs Zaridah Zakaria who not only acted as tutor but also as my most important teacher and best friends with her wise counseling, help and guidance on the application of the statistical tools to analyze the data from the survey.

I wish to express my sincere appreciation to all the respondents which are UUM's lecturers. My sincere appreciation and gratitude also go to various professional and knowledgeable persons, especially UUM's lecturers for their recommendations and information made available to me, which I considered a valuable contribution to this study. I would also like to thank to all my friends for their help and support.

Last but not least to my beloved husband, Muhammad Al-Haadii Bin Hazani and my son, Muhammad Al-Harith Bin Muhammad Al-Haadii for their love, patience, encouragement and continuous support which have made it possible for me to pursue this programme. Thanks are also due to my parents and parents in law. They are having been there for me and have constantly encouraged me to achieve all things possible. Without their support and co-operation, I could not have completed this research study. Only Allah knows how much I love all of you.

I am blessed and thankful of what I conquered. To all those people, thank you so much.

TABLE OF CONTENTS

	Page Number
PERMISSION TO USE	i
ABSTRACT	ii
ABSTRAK	iii
ACKNOWLEDGEMENTS	iv
TABLE OF CONTENTS	v
LIST OF TABLES	x
LIST OF FIGURES	xii
LIST OF ABBREVIATIONS	xiii

CHAPTER 1 : INTRODUCTION

1.0 Introduction	1
1.1 Background of the study	2
1.2 Research Problem	7
1.3 Research Questions	10
1.4 Objective of the study	11
1.5 Scope of the study	11
1.6 Significance of the study	13.
1.7 Definition of terms	14
1.8 Organization of the report	16

CHAPTER 2 : LITERATURE REVIEW

2.0 Introduction	17
2.1 Definitions of Research Variables	18

2.1.1	Knowledge Sharing Behavior	18
2.1.2	Attitude	20
2.1.3	Subjective Norm	21
2.1.4	Perceived Behavioral Control	22
2.1.5	Intention	23
2.2	Theory of Planned Behavior (TPB)	24
2.2.1	Development of theory	25
2.2.2	TRA and TPB	26
2.2.3	Components of TPB	28
2.2.4	Previous Behavioral Theory Models empirically tested	32
2.4	Knowledge Sharing Behavior	33
2.4.1	The Notion of Knowledge	34
2.4.2	Classifications of Knowledge	36
2.4.3	Knowledge Sharing	41
2.5	Research Model	43
2.6	Research Hypothesis Development	44
2.7	Conclusion	45

CHAPTER 3 : METHODOLOGY

3.0	Introduction	46
3.1	Research Design	46
3.2	Sampling Design	49
3.3	Data Collection Method	52
3.3.1	Questionnaire Survey	52
3.3.2	Response Rate	54
3.4	Research Instrument	55
3.4.1	Questionnaire Design (Instruments)	55

3.4.2	Measurement scales	59
3.5	Data Analysis Technique	61
3.6	Pilot Study	62
3.6.1	Factor Analysis	63
3.6.1.1	Factor Analysis of Attitude	64
3.6.1.2	Factor Analysis of Subjective Norm	66
3.6.1.3	Factor Analysis of Perceived Behavioral Control ...	67
3.6.1.4	Factor analysis of Intention	68
3.6.1.5	Factor analysis of Knowledge Sharing Behavior	70
3.6.2	Reliability Analysis	71
3.7	Conclusion	73

CHAPTER 4 : FINDINGS AND ANALYSIS

4.0	Introduction	74
4.1	Reliability Analysis	74
4.2	Descriptive Analysis	76
4.3	The Analysis of Mean Scores	79
4.3.1	T-test Analysis	80
4.3.2	Analysis of Variance (ANOVA)	81
4.4	Correlation Analysis	87
4.5	Hypothesis Tested	89
4.5.1	Hypothesis One	90
4.5.2	Hypothesis Two	91
4.5.3	Hypothesis Three	91
4.5.4	Hypothesis Four	92
4.5.5	Hypothesis Five	93

4.5.6 Hypothesis Six	96
4.5.7 Hypothesis Seven	96
4.6 Conclusion	99

CHAPTER 5 : DISCUSSION AND RECOMMENDATION

5.0 Introduction	100
5.1 Summary of the findings	100
5.2 Knowledge Sharing Behavior	103
5.3 Discussion on Research Hypothesis	106
5.3.1 Hypothesis One	107
5.3.2 Hypothesis Two	109
5.3.3 Hypothesis Three	111
5.3.4 Hypothesis Four	112
5.3.5 Hypothesis Five	114
5.3.6 Hypothesis Six	115
5.3.7 Hypothesis Seven	116
5.4 Recommendations for Improvement in Knowledge Sharing Behavior .	117
5.5 Suggestions to Future Researchers	120
5.6 Conclusion	121
 References	123
 Appendix	132

Appendix		Page Number
Appendix A	Letter of application to collect data	132
Appendix B	Questionnaire	134
Appendix C	Results from SPSS Tests	141
	▪ Reliability Analysis	142
	▪ T-test Analysis	144
	▪ ANOVA Analysis	145
	▪ Correlation Analysis	149
	▪ Hierarchical Regression Analysis	150

LIST OF TABLES

Table	Page Number
Table 3.1: Population of academic staffs in UUM	50
Table 3.2: Sample size for each college	52
Table 3.3: Number of blocks and questions	58
Table 3.4: Number of dimensions before run factor analysis	64
Table 3.5: Dimensions of Attitude towards Knowledge Sharing Behavior	65
Table 3.6: Factor Loadings of Attitude towards Knowledge Sharing Behavior	65
Table 3.7: Dimensions of Subjective Norm towards Knowledge Sharing Behavior	66
Table 3.8: Factor Loadings of Subjective Norm towards Knowledge Sharing Behavior	67
Table 3.9: Dimensions of Perceived Behavioral Control towards Knowledge Sharing Behavior	67
Table 3.10: Factor Loadings of Perceived Behavioral Control towards Knowledge Sharing Behavior	68
Table 3.11: Dimensions of Intention towards Knowledge Sharing Behavior	69
Table 3.12: Factor Loadings of Intention towards Knowledge Sharing Behavior	69
Table 3.13: Dimensions of Knowledge Sharing Behavior	70
Table 3.14: Factor Loadings of Knowledge Sharing Behavior	71
Table 3.15: Reliability analysis	72
Table 4.1 : Reliability Statistic	75
Table 4.2 : Respondent Profile	77

Table 4.3 :	T-test on Mean Scores on Level of Knowledge Sharing Behavior of Respondents by Gender	80
Table 4.4 :	ANOVA on Mean Scores on Level of Knowledge Sharing Behavior from Different Categories of College	82
Table 4.5 :	ANOVA on Mean Scores on Level of Knowledge Sharing Behavior from Different Categories of Lecturer's Position	83
Table 4.6 :	ANOVA on Mean Scores on Level of Knowledge Sharing Behavior from Different Categories of Education Qualification	84
Table 4.7 :	ANOVA on Mean Scores on Level of Knowledge Sharing Behavior from Different Categories of Respondent Age	85
Table 4.8 :	ANOVA on Mean Scores on Level of Knowledge Sharing Behavior from Different Categories of Respondent's Working Experiences	86
Table 4.9 :	Correlation of Variables	88
Table 4.10:	Determinants of Intention	90
Table 4.11:	Intention as a Determinant of Knowledge Sharing Behavior	92
Table 4.12:	The Mediating Role of Intention in the Relationship between Attitude and Knowledge Sharing Behavior	95
Table 4.14:	The Mediating Role of Intention in the Relationship between Perceived Behavioral Control and Knowledge Sharing Behavior	98

LIST OF FIGURES

Figure	Page Number
Figure 2.1: The Theory of Reasoned Action	27
Figure 2.2: The Theory of Planned Behavior	29
Figure 2.3: The SECI-model	39
Figure 2.4: Research Model	43

LIST OF ABBREVIATIONS

KM	Knowledge management
KS_B	Knowledge sharing behavior
TRA	Theory of reasoned action
TPB	Theory of planned behavior
SN	Subjective norm
PBC	Perceived behavioral control
UUM	Universiti Utara Malaysia
CAS	College of Arts and Sciences
COB	College of Business
COLGIS	College of Law, Government and International Studies
SPSS	Statistical Package for Social Science
IV	Independent variable
DV	Dependent variable
ANOVA	Analysis of Variance

CHAPTER 1

INTRODUCTION

1.0 Introduction

Nowadays, the ability of individuals in organization to share knowledge within them is identifying as one of the critical contributing factors for organizational competitiveness. Due to this reason, there is a need to study the factors that influence individual knowledge sharing behaviors in organizations. The purpose of this chapter is to provide some basic information regarding this study. This chapter starts the discussion with background information surrounding the issue. Next, the needs for the study are present followed by the research problems, the research objectives, and the significance of the study. Finally, the definition of terms and the organization of the thesis are detail out.

Knowledge management (KM) is critical to the operation of modern organizations and has attracted much attention by the business world since the introduction of the concept by Davenport and Prusak on 1997 (Chatzoglou & Vraimaki, 2009). It can help businesses retain their valuable intangible assets that are keeping in the mind of their employees. Particularly, effective knowledge sharing among units of an organization has been one of the most important issues of KM. A survey in Financial Times revealed that 94 percent of 260 responses from multinational organizations in Europe believe that successful KM requires employees to share what they know with others in the organization (Gao, 2004)

The contents of
the thesis is for
internal user
only

REFERENCES

Abdulla, A. M. (2007). Assessment of Knowledge Sharing among Lecturers of Universiti Utara Malaysia. Unpublished Master degree dissertation, Universiti Utara Malaysia, Malaysia.

Ahmad, F. (2003). Tacit Knowledge Dissemination among UUM Lecturers. Unpublished Master degree dissertation, Universiti Utara Malaysia, Malaysia.

Ajzen, I. (1991). The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes*, 50, 179-211.

Ajzen, I. (2001). Nature and Operation of Attitudes. *Annual Review Psychology*, 52, 27-58.

Ajzen, I & Fishbein, M. (2004). *The influence of Attitudes on Behavior*. 173-221. Available: <http://scholar.google.com.my/scholar?q=The+influence+of+Attitudes+on+Behavior&hl=en&btnG=Search> , retrieved on 20 August 2009.

Alavi, M. & Leidner, D. E. (2001) Review: Knowledge management and knowledge management systems: Conceptual foundations and research issues. *MIS Quarterly*, 25(1), 107-136.

Alaxei, V. M. (2002). *The Advantages of Employing Quantitative and Qualitative Methods in Intercultural Research: Practical Implications from the study of the Perceptions of Intercultural Communication Competence by American and Russian managers*, Available: http://www.russcomm.ru/eng/rca_biblio/m/matveev01_eng.shtml, retrieved on 8 September 2009.

Albarracin, D., Fishbein, M., Johnson, B. T., & Muellerleile, P. A. (2001). Theories of Reasoned Action and Planned Behavior as Models of Condom Use: A Meta-Analysis. *Psychological Bulletin*, 127(1), 142-161.

Ariffin, A. H. (2004). Managing knowledge in FIT academic environment: A proposed knowledge sharing framework. Unpublished Master degree dissertation, Universiti Utara Malaysia, Malaysia.

Armitage, C. J. & Conner, M. (1999). The Theory of Planned Behavior: Assessment of Predictive Validity and Perceived Control. *British Journal of Social Psychology*, 38, 35-54.

Armitage, C.J. & Conner, M. (2001). Efficacy of The Theory of Planned Behaviour: A meta-analytic review. *British Journal of Social Psychology*, 40, 471 – 499.

Bagozzi, R. P. (1992). The Self-regulation of Attitudes, Intentions and Behavior. *Social Psychology Quarterly*, 55 (2), 178-204.

Bakker, M., Gabbay, Leenders, R. T. A. J., Gabbay, S. M., Kratzer, J. & Engelen, J. M. L. V. (2006). Is Trust Really Social Capital? Knowledge Sharing in Product Development Projects. *The Learning Organization*, 13(6), 594-605.

Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, 17, 99-120

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., & Lee, J. N. (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.

Bowman, B. J. (2002). Building knowledge management systems. *Information systems Management*, summer, 32-40.

Cavana, R. Y., Delahaye, B. L., & Sekaran, U. (2000). *Applied Research: Qualitative and Quantitative Methods*. Sydney: John Wiley & Sons Inc.

Chatzoglou, P. D. & Vraimaki, E. (2009). Knowledge Sharing Behavior of Bank Employees in Greece. *Business Process Management Journal*, 15(2), 245-266.

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

Conner, K. (1991). A Historical Comparison of Resource-based Theory and Five Schools of thought within Industrial Organization Economics: Do we have a new theory of the firm?. *Journal of Management*, 17(1), 121-154.

Danter, E. H. (2005). The Intention-Behavior Gap: To What Degree does Fishbein's Integrated Model of Behavior Prediction Predict whether Teachers Implement Material Learned in a Professional Development Workshop?. Unpublished doctoral dissertation, The Ohio State University.

Dawkins, C. E. & Frass, J. W. (2005). Decision of Union Workers to Participate in Employee Involvement: An Application of the Theory of Planned Behavior. *Employee Relations*, 27(5), 511-531.

Elfving, S. (2007). Managing Collaborative Product Development: A Model for Identifying Key Factors in Product Development Projects. Unpublished doctoral dissertation, Mälardalen University.

George, J. (2004). The theory of planned behavior and Internet Purchasing. *Internet Research*, 14(3), pp. 198-212

Gao, S. (2004). Understanding Knowledge Sharing Behavior. Unpublished Master degree dissertation, The Hong Kong University of Science and Technology.

Hagger, M. S., Chatzisarantis, N. L.D., & Biddle, S. J. H. (2002). The influence of Autonomous and Controlling Motives on Physical Activity Intentions within the Theory of Planned Behavior. *British Journal of Health Psychology*, 7, 283-297.

Hair, J., Money, A., Page, M. & Samouel, P. (2007). *Research Methods for Business*. Chichester, West Sussex: John Wiley & Sons Inc.

Hashim, F. (2004). Knowledge Acquisition in International Strategic Alliances among Malaysian Manufacturing Firms. Unpublished doctoral dissertation, Aston University.

Hashim, F. & Othman, A. (2002). *The Impact of Organizational Culture towards Knowledge Transfer Processes*. Available: www.ickm.upm.edu.my, retrieved on 19 September 2009.

Hinds, P. J., Patterson, M. & Pfeffer, J. (2001). Bothered by Abstraction: The Effect of Expertise on Knowledge Transfer and Subsequent Novice Performance. *Journal of Applied Psychology*, 86, 1232-1243.

Hrubes, D., Ajzen, I. & Daigle, J. (2001). Predicting Hunting Intentions and Behavior. An application of the Theory of Planned Behavior. *Leisure Sciences*, 23, 165-178.

Ibrahim, A., Ismail, H. A., Asree, S. & Said, M. R. (2006). Knowledge Management as Strategy for K-economy: Looking at Malaysia Environment. *Knowledge Management International Conference & Exhibition (KMICE '06)*, Volume 1, Kedah.

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

Jain, K. K., Sandhu, M. S. & Sidhu, G. K. (2007). Knowledge Sharing among Academic Staff: A Case Study of Business Schools in Klang Valley, Malaysia. Research Papers. *JASA* 2, University Tun Abdul Razak.

Kogut, B. & Zender, U. (1992). Knowledge of the Firm, Combinative Capabilities and The Replication of Technology. *Organization Science*, 3(3), 383-397.

Krejcie & Morgan (1970). Determining Sample Size for Research Activities. *Educational and Psychological Measurement*, pp. 607-610

Lam, A. (2000). Tacit Knowledge, Organizational Learning and Societal Institutions: An Integrated Framework. *Organization Studies*, 21(3), 487-513.

Lin, H-F. (2007). Knowledge Sharing and Firm Innovation Capability: An Empirical Study. *International Journal of Manpower*, 28(3/4), 315-332.

Lin, M. J. J. & Chen, J. C. (2008). Integration and Knowledge Sharing: Transforming to Long-term Competitive Advantage. *International Journal of Organizational Analysis*, 16(1/2), 83-108.

Lowendahl, B. R., Revang, O. & Fosstenlokken, S. M. (2001). Knowledge and Value Creation in Professional Service Firms: A framework for Analysis. *Human Relations*, 54(7), 911-931.

Marcoux, B. C. & Shope, J. T. (1997). Application of the Theory of Planned Behavior to adolescent use and misuse of alcohol. *Health Education Research*, 12(3), 323-331.

Mohayidin, M. G., Azirawani, N., Kamaruddin, M. N. & Margono, M. I. (2007). The Application of Knowledge Management in Enhancing the Performance of Malaysian Universities. *The Electronic Journal of Knowledge Management*, 5 (3), 301-312.

Morris, M., Venkatesh V., Ackerman, P. (2005). Gender and Age Differences in Employee Decisions About New Technology: An Extension to the Theory of Planned Behavior. *IEEE Transactions on Engineering Management*, 52(1), 69-84.

Miller, D. L. & Karakowsky, L. (2005). Gender Influences as an Impediment to Knowledge Sharing: When men and women fail to seek peer feedback. *Journal of Psychology*, 139, 101-118.

Ng, P. Y. (2008). *Learning Organization Dimensions on Knowledge Sharing: A Study of Faculty Members in the Private Universities in Malaysia*. Available: www.curtin.edu.my/sch_dept/.../SOB_SProfile.asp?rid=177, retrieved on 12 July 2009.

Nonaka, I. (1994). Dynamic Theory of Organizational Knowledge Creation. *Organization Science*, 5(1), 14-37.

Ojha, A. K. (2005). Impact of Team Demography on Knowledge Sharing in Software Project Teams. *South Asian Journal of Management*, 12, 67-78.

O'neill, R (2006). *The advantages and disadvantages of qualitative and quantitative research methods*. Available: <http://www.learnhigher.ac.uk/analysethis/main/quantitative1.html>, retrieved on 20 July 2009

Pangil, F. (2007) The Relationship between Human Resource Management Practices, Affective Commitment, and Knowledge Sharing Behavior. Unpublished doctoral dissertation, Universiti Sains Malaysia, Pulau Pinang.

Randall, D. M. & Gibson, A. M. (1991). Ethical Decision Making in the Medical Profession: An Application of the Theory of Planned Behavior. *Journal of Business Ethics*, 10(2), 111-116.

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

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

Ruggles, R. (1998). The State of the Notion: Knowledge Management in Practice. *California Management Review*, 40(3), 80-89.

Ryu, S., Ho, H. S. & Han, I., (2003). Knowledge Sharing Behavior of Physicians in Hospitals. *Expert Systems with Applications*, 25(1), 113-122.

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

Sekaran, U. (2003). *Research Methods for Business: A Skill Building Approach*. 4th edition, John Wiley & Sons. Inc.

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

Shani, A. B., Sena, J. A. & Olin, T. (2003). Knowledge Management and New Product Development: A Study of Two Companies. *European Journal of Innovation Management*, 6(3), 137-149.

Sheeran, P. & Orbell, S. (1999). Implementation intentions and repeated behavior: augmenting the theory of planned behavior. *European Journal of Social Psychology*, 29, 349-369.

Sparks P. & Shepherd, R., (1992). Self-identity and the Theory of Planned Behavior: Assessing the role of identification with “Green Consumerism”. *Social Psychology Quarterly*, 55(4), 388-399.

Stringfellow, A. (1998). Managing Diversity to Achieve Knowledge Integration: The Effective Use of Cross-functional Teams in New Product Development. Unpublished doctoral dissertation, University of Florida.

Soule, D. L. (2003). Bridging Knowledge Gaps: Knowledge Sharing and Learning Practices in Virtual Development Teams. Unpublished doctoral dissertation, Harvard University.

Yang, C. & Chen, L. C. (2007). Can organizational knowledge capabilities affect knowledge sharing behavior?. *Journal of Information Science*, 33(1), 95-109.