Copyright is owned by the Author of the thesis. Permission is given for a copy to be downloaded by an individual for the purpose of research and private study only. The thesis may not be reproduced elsewhere without the permission of the Author.

MASSEY UNIVERSITY

EXPLORING EMPLOYEES' PERCEPTIONS OF THEIR CAPABILITY AND SUCCESS OF SHARING KNOWLEDGE: IMPLICATIONS FOR HUMAN RESOURCE MANAGEMENT (HRM)

A dissertation presented in partial fulfilment of the requirement for the degree of Doctor of Philosophy in Human Resource Management (HRM) at Massey University, Palmerston North, New Zealand

Hayati Abdul Jalal
2012

Copyright is owned by the Author of the thesis. Permission is given for a copy to be downloaded by an individual for the purpose of research and private study only. The thesis may not be reproduced elsewhere without the permission of the Author.

ABSTRACT

This thesis considers the relationships among knowledge sharing capability, organisational culture, and knowledge sharing success using employees' perceptions. By exploring these relationships, the thesis seeks to help HRM become a more robust tool for successful employee knowledge sharing within organisations. Human attributes, incorporating employee perceptions of ability, motivation and opportunity to share, describe the construct "knowledge sharing capability". The six perceptions of organisational cultural values examined include collaboration, innovativeness, formalisation, autonomy, expertise, and trust. Data were collected from knowledge workers of four MSC status Malaysian-owned Information Technology (IT) organisations in two states of Malaysia.

Using random sampling, 500 questionnaires were distributed to employees at all levels of these organisations. Of these, 270 questionnaires were useful for data analysis, a 52% valid response rate. The results of factor analyses, however, showed the emergence of unanticipated combinations of organisational culture questionnaire items. This resulted in the emergence of four new cultural values (i.e. formal collaboration, trustworthiness, expertise, and independence). Correlations and multiple regressions were employed to address the proposed research questions.

The results confirmed that: 1) knowledge sharing capability has a positive and significant relationship with knowledge sharing success; 2) knowledge sharing capability has a significant relationship with organisational culture; 3) organisational culture (as found in perceived values of formal collaboration, trustworthiness, and expertise) has a positive and significant relationship with knowledge sharing success; 4) perceived cultural values of formal collaboration, trustworthiness, and expertise perfectly mediated the relationship between knowledge sharing capability and knowledge sharing success; and 5) perceived cultural values of expertise and independence did

moderate the causal link of knowledge sharing capability and knowledge sharing success, but an increase in independence for employees' capability reduces the success of knowledge sharing.

The results suggest the importance of incorporating human attributes (that translate into capability to share knowledge) and organisational culture into the design of HRM practices. The outcome of re-orientating HRM practices to reflect cultural values so that knowledge sharing success is enhanced would be a valuable future investigation. These results show that the greatest potential for knowledge sharing success can be achieved when cultural values are integrated into HRM practices which are then implemented efficiently.

LIST OF PUBLICATIONS

The following publications have been produced from the research reported in this thesis:

1) Abdul Jalal, H., Toulson, P., & Tweed, D. (2009). Organisational culture, knowledge sharing capability and knowledge sharing success: A conceptual framework. Paper presented at the Fourth International Conference on Knowledge Management in Organisations: Knowledge Management and Service Science, Taipei, Taiwan held on 23-24 June 2009.

2) Abdul Jalal, H., Toulson, P., & Tweed, D. (2010). Organisational cultural values for successful knowledge sharing: The case of Malaysia. Paper presented at the ICICKM 2010: 7th International Conference on Intellectual Capital, Knowledge Management & Organisational Learning, Hong Kong held on 11 – 12 November 2010.

3) Abdul Jalal, H., Toulson, P., & Tweed, D. (2010). Human resource (HR) knowledge sharing capability, organisational culture and knowledge sharing success: Implications for HRM Practice. Paper presented at the HRINZ Research Forum University of Auckland, New Zealand held on 18 November 2010.

4) Abdul Jalal, H., Toulson, P., & Tweed, D. (2011). Employee knowledge sharing success: Does gender matter? Paper presented at the ICHRD 2011: International Conference Human Resource Development 2011, Johor Bahru, Malaysia held on 22-23 June 2011.

5) Abdul Jalal, H., Toulson, P., & Tweed, D. (2011). Exploring employee perceptions of the relationships among knowledge sharing capability, organisational culture and knowledge sharing success: Their implications for HRM practice. Paper presented at the ICICKM 2011: 8th International Conference on Intellectual Capital, Knowledge Management & Organisational Learning, Bangkok, Thailand held on 27 – 28 October 2011.

6) Iqbal, S., Abdul Jalal, H., Toulson, P., & Tweed, D. (2012). Knowledge Management (Knowledge friendly culture for successful knowledge sharing) In S. Bruggemann & C. d'Amato (Eds.), *Collaboration and the Semantic Web 2011* IGI Global.

ACKNOWLEDGEMENTS

Finally.....I have made it! What an amazing learning journey it has been.

I wish to acknowledge the people who have helped and supported me throughout the past four years and without whom this thesis would not have been possible.

Special appreciation goes to my supervisors, mentors and friends, Associate Professor Dr. Paul Toulson and Dr. David Tweed who continually and convincingly conveyed a spirit of adventure in regard to research and scholarship and who have always demonstrated their unswerving confidence in me. To Dr. James Ryan, thank you for sharing your ideas and support in the early stage of this new exploration journey of mine.

I would also like to thank Dr. Alasdair Nobel of Statistics Department who helped me negotiate the complexities of statistical analysis, my English tutor, Ms Lois Wilkinson, the academic and administrative staff at School of Management, College of Business, and staff at the Graduate Research School who have provided invaluable assistance at different stages of the process. My appreciation also goes to my doctoral colleagues and dear friends: Dodi, Robyn Mason and Nor A'shikin Ali who willingly listened to my ideas, motivated and encouraged me throughout this journey. Thanks are also due to the Malaysian Ministry of Higher Education (MoHE), and MARA University of Technology (UiTM) for their financial support and assistance.

Last but not least, I am indebted to my husband, Khairul Noramin who sacrified his time and career accompanying me to New Zealand to undertake my PhD. Thank you for your support, care, patience and being a good listener to my ideas, challenging and debating with me throughout. To my lovely children, Ain, Aiman and Asyraf, this thesis provides the answer to your question "why are we here". They were all under 10 years of age when we arrived in New Zealand; they didn't have any idea what this task was all

about but never doubted that their mum would succeed. Their warm support and love sparked my perseverance and their understanding on why I was often unable to join them in numerous social activities added higher value to this thesis. I also owe my deepest gratitude to my beloved mom, brothers and sister who have helped me in their own ways to make this journey possible and meaningful. Finally, I offer my blessing and regards to all of those who supported me in any respect during this exploration journey. Thank you everyone!

Hayati

TABLE OF CONTENTS

ABSTRACT i

LIST OF PUBLICATIONS iii

ACKNOWLEDGEMENTS iv

TABLE OF CONTENTS vi

LIST OF FIGURES xi

LIST OF TABLES xii

GLOSSARY OF TERMS xiv

CHAPTER 1: INTRODUCTION 1

1.1 INTRODUCTION 1

1.2 RESEARCH BACKGROUND AND SIGNIFICANCE OF THE STUDY ... 2

1.3 STATEMENT OF PROBLEM 8

1.4 OVERVIEW OF THESIS STRUCTURE 9

CHAPTER 2: LITERATURE REVIEW 12

2.1 INTRODUCTION 12

2.2 HUMAN RESOURCE MANAGEMENT AND KNOWLEDGE MANAGEMENT 13

2.2.1 What is Human Resource Management (HRM)? 13

2.2.2 What is Knowledge? 16

2.2.3 What is Knowledge Management (KM)? 21

2.2.4 Connecting HRM to Knowledge Management 26

2.3 ORGANISATIONAL CULTURE AND KNOWLEDGE MANAGEMENT 30

2.3.1 What is Organisational Culture? 31

2.3.2 Connecting Organisational Culture to Knowledge Management.....35

2.4 THE RESOURCE-BASED PERSPECTIVE OF ORGANISATIONS.....37

2.5 KNOWLEDGE SHARING.....40

2.6 PREVIOUS RESEARCH ON KNOWLEDGE SHARING 45

2.7 HUMAN RESOURCE (EMPLOYEE) KNOWLEDGE SHARING CAPABILITY 48

2.7.1 The Ability to Share Knowledge 50

2.7.2 The Motivation to Share Knowledge 51

2.7.3 The Opportunity to Share Knowledge 55

2.8 THE IMPORTANCE OF EMPLOYEE'S CAPABILITY IN THE KNOWLEDGE SHARING PROCESSES 57

2.9 KNOWLEDGE SHARING SUCCESS 61

2.10 THE CONCEPTUAL IDEA OF ORGANISATIONAL CULTURE.....62

2.10.1 Critical Success Values for Knowledge Sharing 67

2.11 CHAPTER CONCLUSION 76

CHAPTER 3: FRAMING THE PRESENT STUDY 77

3.1 INTRODUCTION.....77

3.2 THE BASIC RESEARCH MODEL.....79

3.3 CONCEPTUAL FRAMEWORK FOR THE RESEARCH.....82

3.4 RATIONALE FOR CONDUCTING THE RESEARCH 85

3.5 OPERATIONALISING THE CONCEPTUAL MODEL.....88

CHAPTER 4: RESEARCH METHODOLOGY.....91

4.1 INTRODUCTION 91
4.2 MEASURES OF CONSTRUCTS 92
4.2.1 The Measurement of Organisational Culture 92
4.2.2 The Measurement of Knowledge Sharing Capability (KSC) 93
4.2.3 The Measurement of Knowledge Sharing Success (KSS) 93
4.3 QUESTIONNAIRE DESIGN 94
4.3.1 The Framework of Questionnaire Design 94
4.4 THE QUESTIONNAIRE 104
4.5 SAMPLE AND DATA COLLECTION 105
4.7 ANALYTICAL STRATEGY 110
4.7.1 Data Screening 110
4.7.2 Checking for Outliers 111
4.7.3 Checking Multivariate Assumptions 112
4.8 SCALE RELIABILITY 118
4.9 CONSTRUCT VALIDITY 119
4.10 METHOD OF ANALYSIS 120
4.10.1 Exploratory Factor Analysis 120
4.10.2 Analysis of Variance (ANOVA) 123
4.10.3 Correlations 123
4.10.4 Regression Analysis 123
4.11 CHAPTER CONCLUSION 124
CHAPTER 5: RESULTS 125
5.1 INTRODUCTION 125
5.2 DESCRIPTION OF RESPONDENT SAMPLE CHARACTERISTICS 125

5.3 MEASUREMENT RESULTS FOR RESEARCH VARIABLES.....128

5.3.1 Factor Analysis 129

5.3.2 Construct Validity 138

5.3.3 Analysis of Variance (ANOVA).....139

5.4 RELATIONSHIP TESTING 139

5.4.1 The Relationships between Knowledge Sharing Capability and Knowledge Sharing Success 140

5.4.2 The Relationships between Knowledge Sharing Capability and Organisational Culture 141

5.4.3 The Relationships between Organisational Culture and Knowledge Sharing Success 143

5.4.4 Mediating role of organisational culture 146

5.4.5 Moderating role of organisational culture.....152

5.5 CHAPTER CONCLUSION 156

CHAPTER 6: DISCUSSION 157

6.1 INTRODUCTION.....157

6.2 IS THERE ANY RELATIONSHIP BETWEEN KNOWLEDGE SHARING CAPABILITY AND KNOWLEDGE SHARING SUCCESS?157

6.3 IS THERE ANY RELATIONSHIP BETWEEN KNOWLEDGE SHARING CAPABILITY AND ORGANISATIONAL CULTURE? 160

6.4 IS THERE ANY RELATIONSHIP BETWEEN ORGANISATIONAL CULTURE AND KNOWLEDGE SHARING SUCCESS? 166

6.5 WHAT VALUES DO THE EMPLOYEES PERCEIVE TO BE THE MOST FAVOURABLE (PREFERRED) FOR KNOWLEDGE SHARING SUCCESS?.....170

6.6 THE MEDIATING EFFECT OF ORGANISATIONAL CULTURE.....172

6.7 THE MODERATING EFFECT OF ORGANISATIONAL CULTURE ...174

6.8 SOME BROADER RESEARCH IMPLICATIONS 175

6.7 IMPLICATIONS FOR BUSINESS 178

6.7.1 Knowledge Intensive Organisations 178

6.7.2 Malaysian IT Industry 179

6.7.3 The Role of HRM in Encouraging Employees Knowledge Sharing181

6.8 IMPLICATIONS FOR THEORY 185

6.9 RESEARCH LIMITATIONS 190

6.9.1 Sample 190

6.9.2 The Nature and Scope of the Questions 192

6.10 FUTURE RESEARCH 193

6.11 CHAPTER CONCLUSION 196

CHAPTER 7: THESIS CONCLUSION 198

REFERENCES 203

APPENDICES 229

APPENDIX A: QUESTIONNAIRE 230

APPENDIX B: INFORMATION SHEET 232

APPENDIX C: ETHICS APPROVAL 233

APPENDIX D: FACTOR LOADINGS OF ITEMS BASED ON PRINCIPAL COMPONENT ANALYSIS (PCA) 234

APPENDIX E : FACTOR LOADINGS OF ITEMS BASED ON PRINCIPAL AXIS FACTORING (PAF) 240

LIST OF FIGURES

Figure 3.1. Basic research framework..... 82
Figure 3.2. Knowledge sharing capability, organisational culture and knowledge sharing success..... 85
Figure 4.1. The framework for developing the questionnaire..... 97
Figure 4.2. The normal probability plot (P-P) of the regression standardised residual..... 118
Figure 4.3. Scatterplot of standardised residuals..... 120
Figure 5.1. Scree Plot for 51 items by Principal Component Analysis.. 134
Figure 5.2. Correlation of knowledge sharing capability and knowledge sharing success..... 142
Figure 5.3. Correlation of formal collaboration and knowledge sharing capability..... 143
Figure 5.4. Correlation of trustworthiness and knowledge sharing capability..... 144
Figure 5.5. Correlation of expertise and knowledge sharing capability..... 144
Figure 5.6. Correlation of independence and knowledge sharing capability..... 145
Figure 5.7. Correlation of formal collaboration and knowledge sharing success..... 146
Figure 5.8. Correlation of trustworthiness and knowledge sharing success..... 147
Figure 5.9. Correlation of independence and knowledge sharing success..... 147
Figure 5.10. The path diagram model (Adapted from Baron and Kenny, 1986, p. 1176)..... 149
Figure 5.11. The moderating diagram model (Adapted from Baron and Kenny, 1986, p.1174)..... 155
Figure 6.1. The resultant conceptual framework..... 189

LIST OF TABLES

Table 4.1 Summary of negative-worded items..... 102

Table 4.2 Summary of items in the questionnaire..... 103

Table 4.3 Experts' comments and actions taken..... 104

Table 4.4 The summary of distributed anad returned questionnaires..... 111

Table 4.5 Casewise diagnostics statistics..... 114

Table 4.6 Correlation matrix for variables..... 116

Table 4.7 Coefficients for variables..... 117

Table 5.1 Demographic characteristics of the respondents..... 128

Table 5.2 Factor loadings of knowledge sharing success..... 135

Table 5.3 Factor loadings of knowledge sharing capability..... 136

Table 5.4 Factor loadings of dropped items..... 137

Table 5.5 Factor loadings of formal collaboration..... 138

Table 5.6 Factor loadings of trustworthiness..... 139

Table 5.7 Factor loadings of expertise..... 139

Table 5.8 Factor loadings of independence..... 140

Table 5.9 One-way ANOVA of factor scores by management status..... 141

Table 5.10 Regression analysis – Knowledge sharing success on control, independent, and mediator variables..... 150

Table 5.11 Regression analysis – Organisational culture (formal collaboration) on control and independent variables..... 150

Table 5.12 Regression analysis - Organisational culture (trustworthiness) on control and independent variables..... 151

Table 5.13 Regression analysis - Organisational culture (expertise) on control and independent variables..... 151

Table 5.14 Regression analysis - Organisational culture (independence) on control and independent variables..... 151

Table 5.15 Regression analysis - Knowledge sharing success on control, independent, and mediator variables..... 151

Table 5.16 Results of regression analysis of knowledge sharing success (mediation)..... 153

Table 5.17 Results of regression analysis of organisational culture..... 154

Table 5.18 Regression analysis – Knowledge sharing success on control and interaction variables..... 156

Table 5.19 Regression analysis - Knowledge sharing success on control, predictor, moderator, and interaction variables..... 157

Table 5.20 Results of regression analysis of knowledge sharing success (moderation)..... 158

Table 6.1 Knowledge sharing behaviour of IT employees: Trustworthiness and network relationships..... 167

GLOSSARY OF TERMS

ANOVA	-	Analysis of Variance
HRM	-	Human Resource Management
EFA	-	Exploratory Factor Analysis
IT	-	Information Technology
KIFs	-	Knowledge Intensive Firms
KM	-	Knowledge Management
KSC	-	Knowledge Sharing Capability
KSS	-	Knowledge Sharing Success
MSC	-	Multimedia Super Corridor
OC	-	Organisational Culture
PASW	-	Predictive Analytics Software
PAF	-	Principal Axis Factoring
PCA	-	Principal Component Analysis
RBV	-	Resource-Based View
SHRM	-	Strategic Human Resource Management
VIF	-	Variance Inflation Factor

CHAPTER 1: INTRODUCTION

1.1 INTRODUCTION

The management of knowledge and human resources for successful knowledge sharing is the focus of this thesis. It is an exploratory study across a sample of four Multimedia Super Corridor (MSC) status IT organisations in Malaysia. The study explores employee perceptions of the human resource management (HRM) practice characteristics that contribute to successful knowledge sharing among knowledge workers. Perception, as defined by Robbins, Judge, Millet and Boyle (2011, p.144), refers to “a process by which individuals organise and interpret their sensory impressions in order to give meaning to their environment”. This suggests that perceptions can differentiate people’s reactions to the same events, consequently determining their behaviours. Thus, one individual’s perception about successful knowledge sharing may not be identical with others, even though they are working in the same environment. Understanding employees’ perceptions may deepen knowledge from “ground zero” of an organisation by accessing information on what employees actually desire as they try to ensure that they are achieving their organisation’s objectives. This is because the perception that governs employee behaviour can impact on the successful implementation of organisational strategies (Robbins et al., 2011).

In particular, this research explores the relationships among the influencing factors of knowledge sharing success through the lens of human resource management (HRM). The aim is to empirically examine the contributions and role of HRM practice characteristics for knowledge sharing success, and how their relationships affect knowledge-driven practices. While there has been a great deal of discussion about the relationships between the culture of an organisation and human attributes for organisational knowledge-driven HRM practices, no real attempt has been made to explore directly what these relationships are. While introducing new practices or suggesting the best

facilitation practices are not the focus of the current research, the motivation to carry out this research is to initiate ways of helping HRM practices to become a success catalyst for knowledge sharing within organisations. This thesis draws upon research conducted in other countries on knowledge sharing in relation to HRM to identify the knowledge-driven factors in MSC status organisations in Malaysia.

This chapter introduces the research by providing background information relating to Malaysia and the nature of Multimedia Super Corridor status organisations, followed by knowledge sharing in relation to HRM in general. It highlights the need to explore the HRM practice characteristics contributing to the success of knowledge sharing to allow for a better understanding of the issues relating to knowledge-driven practices for IT organisations in Malaysia. The research problem and its key assumptions, the justification of the study, along with the potential theoretical and practical contributions of the research for the HRM field are outlined. Finally, this Chapter presents the structure of the thesis.

1.2 RESEARCH BACKGROUND AND SIGNIFICANCE OF THE STUDY

Malaysia is a multiracial country of about 23 million people in Southeast Asia that consists of thirteen states and three Federal Territories. While Islam is the country's official religion, freedom of worship is guaranteed by the constitution. Malaysia's mixed culture has evolved since the time of the spice route period with traders from India and Chinese bringing Buddhism, Islam, Hinduism, Taoism and Confucianism to join the indigenous religion (Selvarajah & Meyer, 2008). Colonisation by the Portuguese, Dutch, British and Japanese has introduced Malaysia to many other cultural, political, economic and social influences. In addition to numerous ethnic minorities, Malay (60%), Chinese (30%) and Indians (10%) are identified as the three main groups that make up the total population of Malaysia. While each group has maintained its cultural heritage and identity, legislative policies enacted

in the 1970s, which aimed at building a unified, multiracial nation, following racial strife in the late 1960s, have allowed each group to live and work side by side in forging a strong, modern Malaysia (Merriam & Mohamad, 2000).

Despite Malaysia now being a multiracial nation with each of these main groups distinguished through their unique culture, Abdullah's (1994) research on leading and motivating the Malaysian workforce suggests that certain values appear to be common to all Malaysian ethnic groups. These common values include collectivism, hierarchy, relationship orientation, preserving another person's face (jaga maruah), religion and pursuit of success. It was anticipated that these cultural values would, to some extent, be reflected in the organisations or businesses operating in Malaysia. Abdullah (1994) suggests that Malaysians emphasise togetherness, find enjoyment in relationships and cherish the "we" orientation that interprets self-interest as deviant behaviour.

However, Kennedy (2002) suggests that while Malaysians place particular emphasis on collective well-being and display a strong humane orientation within society, they do respect hierarchical differences. In general, Malaysians accept the inequality of power distribution with titles and honorifics used for hierarchical differences, and willingly expect elders who are power holders to take the lead. Their authority is often undisputed (Abdullah, 1994). Directions or orders and important decisions are usually made by power holders, owners and the senior management of companies. Employees must follow instructions without question, as asking questions can be considered rude and ill-mannered (Abdullah, 1994). Within an organisational context, this particular value may restrict employees' independence towards job execution. While Malaysians are status conscious and accept the fact that power in institutions and organisations is distributed unequally, they also try to reduce uncertainty and ambiguous situations by establishing more formal rules, not tolerating deviant ideas and behaviours, believing in absolute truths, and the attainment of expertise (Abdullah, 1994; Kennedy, 2002).

Malaysians are also relationship oriented in that "their lives are embedded in a complex web of ties to family, village, country, and/or social group, where mutual and reciprocal obligations are clearly understood and acted upon" (Merriam & Mohamad, 2000, p. 49). Abdullah (1994) also suggests the concept of face (*jaga maruah*), the extent to which an individual is responsible to preserve another person's face (dignity) by not embarrassing or humiliating him/her in front of others, is important in preserving personal relationships and social harmony. Malaysians' religion is also a factor in maintaining harmonious relationships that "happiness comes from suppressing self-interests for the good of others or discovering it from within oneself through prayer and meditation" (Abdullah, 1994, p. 28). This means that for many Malaysians their ambitions are moderate because they need to consider the needs of their family. For many, contentment is sought through religion or spirituality. In relation to the pursuit of success, Abdullah (1994) suggests that Malaysians are determined to achieve the country's Vision 2020. The importance of this new spirit is highlighted in the encouraging of Malaysians to think creatively, whilst the harmony of the multicultural society is maintained.

As part of its overall effort to lead Malaysia to realise Vision 2020 and into the Information Age, the Malaysian government has initiated an ICT project known as the Multimedia Super Corridor. The MSC project was designed to encourage creativity and innovation; it assists companies to reach new technological and innovative frontiers, partnering with global information technology players (such as IBM, Microsoft, Acer, and Sun Microsystems) and providing the opportunity for mutual enrichment and success (Multimedia Development Corporation (MDeC), 2009). In a way to leapfrog the nation into a knowledge based economy and to achieve excellence in innovation, the Malaysian government has introduced the MSC flagship applications. These applications are Mykad, Smart school, Electronic government and Telehealth. The aim of these applications is to enhance Malaysian socio economic development, help businesses bridge the digital gap between them and a fast moving e-commerce economy, as well as improving the way in

which these applications operate (MDeC, 2009). By re-inventing the way these applications operate, the connectivity and facilitation of information flows and processes between the people of Malaysia and government can be improved. It is therefore, enabling the government to become more responsive to the needs of Malaysian citizens.

Both local and foreign companies that meet the qualifying criteria are awarded with MSC status (MDeC, 2009). MSC status companies must develop or use multimedia technologies to produce or enhance their process development, products and services. The creation of this dynamic ICT hub and the establishment of MSC status companies have resulted in a rise of demand for knowledge workers and effective knowledge management approaches (MDeC, 2009). The 2008 Impact Survey, which outlines the key impacts of the MSC initiative, has revealed that a total of 79,005 jobs have been created by MSC status companies and that 74.17% (i.e. 66.76% Malaysian and 7.41% foreigner) of the total workforce is classified as knowledge workers (MDeC, 2010).

Due to the nature of the activities and foci of these MSC status companies, successful knowledge sharing among knowledge workers is acknowledged as an important factor for competitive advantage, and for the successful implementation of MSC projects. It is seen as the key success factor of contemporary organisations, so this aspect is currently receiving much attention from both practitioners and researchers such as Liao, Fei, & Chen (2007), Minbaeva (2008), Cummings and Teng (2003), Oltra (2005), and Styhre (2002).

A review of the literature indicates that there is no universal definition of knowledge sharing and that many different perspectives and interpretations of knowledge sharing exist**.** However, in general, researchers view knowledge sharing as an activity or behaviour involving the transfer and dissemination of knowledge from one person to another (Bartol & Srivastava 2002; Cummings, 2003; Hsu, 2008; Lin, 2007). In facilitating successful employee knowledge sharing, a list of potential HRM practices also known as

"knowledge-driven practices" (Minbaeva, 2005, p. 126) have been suggested in the literature. Knowledge-driven practices generally can be considered as any practices that facilitate employee knowledge sharing within organisations. A more thorough discussion of knowledge sharing and knowledge-driven practices associated with knowledge-related outcomes is provided in Chapter 2 (Literature Review).

Against such a background, the key objectives of this research are twofold. The first objective attempts to provide in-depth understanding of knowledge-driven HRM practice characteristics contributing to successful knowledge sharing within an organisational context, from the employee's perspective. The second objective is to discover ways of helping HRM become successful as a catalyst for knowledge sharing to take place. In particular, this research will focus on the relationships between knowledge sharing capability, organisational culture and knowledge sharing success in MSC status organisations. It aims to create a better understanding of employee knowledge sharing behaviour in these companies and to initiate more detailed research in this field in Malaysia. Understanding the proposed relationships may provide insights for the improvement of HRM practices that are considered important drivers for fostering a knowledge-friendly culture and translating knowledge sharing capability into successful outcomes. Thus, this research has meaningful implications for both HRM and knowledge management (KM) researchers and practitioners in Malaysia and other international contexts.

This thesis makes a number of contributions to knowledge sharing success research. Notably, the novelty of this research is in bringing together two disciplines, HRM and KM, each of which is located at the extremes on a continuum in managing organisational knowledge. It is among the first attempts to empirically examine the role of human attributes and organisational culture for successful knowledge sharing within knowledge-based organisations, in particular Malaysian MSC status IT companies, from the perspective of employees. The research differs from the existing work on HRM and knowledge sharing in two ways. First, the thesis contributes to

determine how the knowledge-driven HRM practices should be designed to best fit the goal of facilitating knowledge sharing within organisations. Second, the thesis contributes to the design of methodology in knowledge sharing success research through identifying the underlying constructs using exploratory factor analysis. There is a need for an understanding of the underlying structure of these constructs, particularly in the Malaysian context, where little research has been conducted. This means methodology can be enhanced by the design of the questionnaire that provides confidence through the selection of appropriate items.

In addition to its academic contributions, the findings of the thesis will have implications for the practice of HRM. Knowledge about the relationships among knowledge sharing capability, organisational culture and knowledge sharing success contributes to understanding of the role of HRM in facilitating successful knowledge sharing behaviour. The findings provide HRM practitioners with the ability to identify the variables that may increase or encourage knowledge sharing among employees or to intervene to reduce those variables that do not enhance successful knowledge sharing. Furthermore, knowing the distinctive affect of cultural values on employees' behaviour is a real contribution to the understanding of what organisations should do in order to obtain benefits from knowledge sharing. Through the identification of these variables, the thesis will also contribute to the business sector by helping the management of knowledge-based organisations re-orient their practices to achieve superior performance. The implications described above are important for practitioners to close the gap that exists in relation to knowledge-driven practices within IT industry/organisations.

While this thesis makes a significant contribution to the research, theory and HRM practices for facilitating knowledge sharing success, it is acknowledged that there are a number of assumptions that had to be made in order to operationalise the research questions. First, this research uses self-administered survey questionnaires to generate the data. A significant assumption is that the understanding of the questions by respondents to the survey questionnaire, posed in two languages (English and Bahasa

Malaysia[1]), is the same. However this is a reasonable assumption given that respondents are all educated to university graduate and postgraduate levels, and have gone through an educational system where the medium of instruction is either English or Bahasa Malaysia. A second assumption is that cultural differences between the contexts in which the questionnaires were developed and in which they are used will not influence the responses provided. Third, it is also assumes that restricting the research to an area limited to two big cities, which can be physically visited for distributing and collecting questionnaire, will give higher return rates and a representative sample. Finally, it is assumed that respondents truthfully answered the questions relating to their perceptions of knowledge sharing in their workplace.

1.3 STATEMENT OF PROBLEM

Research on knowledge sharing has continually stressed the need for the identification of the best facilitation practices for successful knowledge sharing among employees. The list of potential practices and expectations has grown without reaching any consensus on "one universally applicable truth" or "best practice approach" (Carter & Scarbrough, 2001, p. 217). In trying to operationalise the best practices for facilitating knowledge sharing within organisations, scholars have acknowledged the importance of cultural characteristics, and a moderating variable that incorporates individuals' abilities and motivation to share knowledge (Minbaeva, 2008; Wang & Noe, 2010). The question guiding this empirical study is: How can HRM practices be improved to best facilitate the process of sharing knowledge among employees and what are their perceptions of knowledge sharing success?

Previous research has confirmed the significant effect of human attributes and organisational culture for knowledge sharing (Alavi, Kayworth, & Leidner, 2005; Minabeva, Makela, and Rabbiosi, 2010; Nayir & Uzuncarsili, 2008; Siemsen, Roth, & Balasubramanian, 2008). A conceptual framework linking

[1] A Malaysian national language

these human attributes and the necessary conditions for them to work best in facilitating knowledge sharing has already been suggested (Kelloway & Barling, 2000). However, empirical research into the relationship between knowledge sharing capability, organisational culture and success, especially from the employees' point of view remains scare. Identifying the cultural values that should underlie HRM practices in supporting employees' capability to knowledge share successfully is then necessary.

1.4 OVERVIEW OF THESIS STRUCTURE

This dissertation is presented in seven chapters, supplemented by six appendices that provide further explanation of aspects of this research. The first chapter provides an introduction to the dissertation, with a brief discussion of the background, research context and focus, and reasons for conducting the research.

In the second chapter the review of the literature supporting the development of a conceptual framework is presented. It describes the context to this study by introducing the key literature relating to the underlying research that considers knowledge sharing capability and organisational culture are the key elements that contribute to the organisational knowledge sharing success. The function of knowledge management, human resource management, and organisational culture along with their interrelationships are introduced. The chapter further discusses the role of knowledge sharing and highlights the importance of employees' capability to share as well as the mechanisms that facilitate its success. The important issues associated with the definitions of all concepts are reviewed, and the appropriate indicators that would be measured in the context of this study are suggested.

The third chapter describes the rationale for the development of a research model to explore the relationship between knowledge sharing capability, organisational culture, and knowledge sharing success. In this research, these concepts are linked to test the assumption that if human attributes (that are translated into knowledge sharing capability) and organisational culture

are important for HRM practices aimed to facilitate knowledge sharing, both factors then, should have relationships with knowledge sharing success. The framework of the research, that provides support for the four questions formulated as the basis of inquiry in this research, is then presented. Finally, the chapter discusses the development of measures for the variables and methodology for operationalising the research model.

Issues of research design and methodology are discussed in the fourth chapter. The quantitative survey development and instruments used for data collection, along with sample selection and data collections procedures are addressed. The chapter also presents the framework for the analysis of the results. The relationships depicted in the conceptual research model are analysed using the predictive analytics software (PASW) version 18 (i.e. analysis of variance (ANOVA), factor analysis and correlation). The results of each of the research questions addressed are the subject of the fifth chapter.

The fifth chapter begins with a discussion on the use of factor analysis to produce a modified measure of organisational culture, knowledge sharing capability and knowledge sharing success. The justification (through ANOVA) of the decision to distinguish the participants by subgroups of employees is also described. The relationships among variables are tested using the Pearson product-moment correlation. The implications of the results of the organisational culture, knowledge sharing capability, and knowledge sharing success scales are discussed in terms of research from the Malaysian context. The findings, in relation to the research questions addressed are detailed in the sixth chapter.

The sixth chapter also describes some important implications for the practice and study of HRM, and knowledge management as well as for knowledge based organisations, both in Malaysia and internationally. The limitations in interpreting the results and suggestions for future research are also discussed in this chapter. Finally, in the seventh chapter, the research conclusion is presented. It summarises the relationships between knowledge sharing capability, organisational culture, and knowledge sharing success, to

answer the broad question of “what contributes to success knowledge sharing among employees within organisational context?” with the purpose of assisting HRM practices become a successful catalyst for knowledge sharing.

CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION

The purpose of this chapter is to place the research problem in its academic context by presenting the review of literature on human resource management (HRM), knowledge management (KM) and organisational culture and their relationships. The discussion begins with the presentation of their various definitions to establish a foundation for understanding the operational variables in this area before moving to a detailed discussion on their relationships. The review then moves on with a discussion of the resource-based view (RBV) that emphasises the importance of knowledge and HRM practices in creating organisational specific competencies.

The pivotal role of knowledge sharing in developing organisational competitive advantage is highlighted, and previous research on knowledge sharing activity is examined. The review continues with a discussion on the human resource (HR) capability to share knowledge. The role of human attributes such as ability, motivation and opportunity to share knowledge is introduced. Their importance in facilitating employees' knowledge sharing is then emphasised.

The concept of knowledge sharing success is then introduced before moving to a detailed discussion on the underlying theory that generates the conceptual idea of organisational culture for this research. Finally, the chapter explores the successful organisational cultural values believed to influence employees' knowledge sharing. The evaluations are centred on an attempt to model the organisational culture of knowledge management in identifying the values to be examined in this research.

2.2 HUMAN RESOURCE MANAGEMENT AND KNOWLEDGE MANAGEMENT

The purpose of this section is to provide a theoretical framework on the management of human resources and knowledge within organisational context, and to highlight the importance of HRM to KM.

2.2.1 What is Human Resource Management (HRM)?

Human resource management (HRM) can be defined as a management of organisational human capital in achieving the integration (fit) between business and its strategy (Armstrong, 2003). In other words, the aim of HRM is to assist an organisation to achieve its objectives through the utilisation of human capital. Human capital is the pool of employee talent and all its potentialities that brings economic value to an organisation. This pool plays an important role in the achievement of organisational high performance levels. Therefore, HRM includes all activities that relate to the management of people and work for achieving organisational economic and socio-political goals (Boxall & Purcell, 2011). These activities incorporate all employment policies and practices employed to manage and organise them, including selection, recruitment, training and development, appraising, deploying, motivating and employee retention.

Specifically, the goals of HRM are: i) achieving high performance through people; ii) enhancing motivation, commitment, and job engagement; iii) developing human capital advantage; iv) valuing employees; and, v) improving employee relations (Armstrong, 2003). Organisations can achieve high performance levels through the integration of HRM and business strategies. Improving employees' performance, through enhancing their motivation, commitment, and job engagement, may reduce turnover and absenteeism. In realising the goal of achieving human capital advantage, organisations should have a systematic approach to knowledge management, resourcing and HR development. Boxall and Purcell (2011)

suggest that organisations obtain a human resource advantage when they have the capability to be superior to their competitors through the quality of human resources they have employed (human capital advantage). This advantage can be improved if the organisation also develops a social capital advantage by encouraging collaboration amongst their talented employees. Thus, an organisation with a pool of competitive, knowledgeable and skilled employees that develops their capabilities, while reinforcing a culture of sharing knowledge among its employees, will achieve competitive advantage. The basic premise in HRM is that humans are not machines; their achievements should be valued and rewarded. In achieving this goal, it is HRM's responsibility to enhance employees' motivation and commitment through the introduction of systematic policies and procedures that recognise and value their achievement (Armstrong, 2003). HRM is also responsible for maintaining harmonious workplace relationships through partnerships between management and employees.

HRM is expected to add value to the utilisation of human capital and the management of work through a set of strategies that can be applied to the whole system within an organisation (Boxall & Purcell, 2011). These authors define strategy as a "set of strategic choices" (p. 62) that provides direction to the organisation in relation to its goals. It involves a process of defining organisational intentions and plans to achieve the best configuration to maintain competitive advantage, through appropriate distribution of both human and non-human assets (Armstrong, 2003). Thus, strategic management, as Boxall and Purcell (2011, p. 62) suggest, involves an organisation's approach to developing "critical goals and resources", and therefore HRM has an important role in improving its strategic management process. This process involves an approach to decision making on the choices of employment practices and policies, or what Boxall and Purcell (2011, p. 61) call a "cost-effective approach to HRM". This strategic HRM (SHRM) links the organisational goals and decision making directly with the management of human capital and work through practices like recruitment, rewards, training and development.

However, within SHRM theory, there is no one specific bridge between HRM and strategy. Instead, Boxall and Purcell (2011) suggest that the theoretical debate within these research streams are contested between the approach of the “best fit” and “best practice” or a universalism perspective. The latter approach is based on the belief that there is a set of best practices that can be applied in all organisational contexts, and that implementing them can improve organisational performance levels. However, it is possible that practices and policies that promote improvement in one organisation may not provide the same outcomes when they are applied in other organisational contexts. The problem of integration with organisational culture, strategy, leadership style, or, even working practices has created an important debate on this perspective. The “best fit” approach is related to the contingency perspective and suggests that HRM can improve organisational performance through the integration (fit) of the practices and policies with the organisational context. In other words, HRM can help organisations achieve competitive advantage by tailoring their practices and policies to their specific contexts (Boxall & Purcell, 2011). Nevertheless, reviewing the work of other scholars in this area, Armstrong (2003) agrees that differentiating these two approaches should not be a priority. Instead, concern with organisational change processes should be emphasised, to ensure decisions match human capital needs. This theoretical debate, confirms the importance of developing a good fit between the organisational/business strategy and its HRM policies and practices to optimise competitive advantage.

In the search for competitive advantage, the importance of knowledge management and organisational learning has been repeatedly emphasised (Armstrong, 2003). Although knowledge management has been strongly linked to its systems (i.e information technology), it is more about people and their sharing behaviors that are becoming an important aspect of HRM (Armstrong, 2003). HRM through its practices can contribute to the achievement of successful implementation of knowledge management because knowledge is shared between people. HRM’s responsibility is to ensure that an organisation has the available intellectual capital to achieve its

goals and that it has structures that support and motivate employees to share their knowledge.

2.2.2 What is Knowledge?

Knowledge can be divided into individual and organisational components. Individual knowledge is anchored within individuals, whereas organisational knowledge is embedded in different elements of organisations such as the structure of technology, and the systems or routines used by the organisation (Argote & Ingram, 2000).

Defining the term knowledge generates a pool of arguments among philosophers in the field of epistemology. Epistemology refers to knowledge theory concerned with the nature and scope of knowledge and its relationship with the notion of truth, belief, and justification. For instance, one may see knowledge from an objective point of view, which interprets knowledge in terms of formal logic and facts. Others may see it from the subjective point of view that considers and accepts a variety of interpretations, based on people's feelings or perceptions.

Traditional epistemology defines knowledge as a true belief that is justifiable and acknowledges "truthfulness" as an essential attribute of knowledge (Nonaka, 1994). Nonaka suggests that epistemologists see knowledge as absolute, static, and nonhuman, and that it is expressed in propositional forms of formal logic. According to this theory, in order to accept the beliefs that are held true cognitively as knowledge, one must not only believe that knowledge is true but also be able to justify it.

The difficulty that exists in defining this important organisational resource is that knowledge is considered a self-evident concept (Hertog & Huizenga, 2000). The meaning of 'knowledge' can be clarified and easily understood if one manages to distinguish the difference between the concept of 'data' and 'information'. Some people tend to confuse the word 'knowledge' with 'information' and 'data'; therefore, consequently these terms are often used

interchangeably in the literature (Kakabadse, Kakabadse, & Kouzmin, 2003). They are not interchangeable as they are not synonymous. Instead, a pertinent relationship exists among these concepts, which can be observed from understanding how each concept builds upon each other.

For example, De Long and Fahey (2000) suggest the importance of distinguishing the interrelated concepts of data, information, knowledge, and wisdom in order to gain a better understanding of managing knowledge. They refer the term “data” to unprocessed descriptions about past, present, or future words. Similarly, Awad and Ghaziri (2004), define ‘data’ as unorganised and unprocessed facts that are static in nature. As such data carry no meaning unless one understands the context in which they were collected. Information explains the patterns that individuals search for in data (De Long & Fahey, 2000) or recognise as a flow of messages (Nonaka, 1994). Awad and Ghaziri (2004) suggest that information shapes and forms the data to arrive at a meaning in the eyes of the receiver, and involves an aggregation, reformatting, and processing of data that permits an easy way for an individual to make decisions (Misra et al., 2003). Misra et al. (2003) also suggest that the combination of past experiences, insights, beliefs and values creates knowledge. As such, information extends the concept of data in a broader context, which has meaning, purpose, and relevance to the individuals’ contexts.

De Long and Fahey (2000) define knowledge as a product of human reflection and experience. In addition, Alavi and Leidner (2001) refer to knowledge as the inflow of new stimuli that is initiated by human cognitive processes. Nonaka (1994), however, defines knowledge as information that has been created and arranged by its flow, and anchored on the commitment and beliefs of its holder. Turban, Aronson and Liang (2005) define knowledge has both strong experiential and reflective elements that clearly distinguish it from information.

However, since there are unclear boundaries around explanations surrounding the definition of knowledge, Allee (1997) suggests that

knowledge may be pictured as either an object, a process, a complex system, or a combination of all three, depending on how individuals think about the usefulness of the knowledge. The author defines knowledge as communicated and shared experiences. Davenport and Prusak (2000, p.5), provide a clearer and more distinctive explanation on the definition of knowledge, suggesting that:

> "....knowledge is a fluid mix of framed experiences, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knower. In organisations, it often becomes embedded not only in documents or repositories but also in organisational routines, processes, practices and norms."

The literature of knowledge management shows further definitions of knowledge and has resulted in two important definitions of knowledge (Alavi & Leidner, 2001; Martensson, 2000). These are perspectives of knowledge and taxonomies of knowledge or properties of knowledge (Argote, McEvily & Reagans, 2003). Several perspectives of knowledge outlined by Alavi and Leidner (2001) show that these different perspectives of knowledge will lead to the emergence of various strategies for managing organisational knowledge. For example, viewing knowledge from the perspective of distinguishing between information and data establishes the foundation of research in information technology. Other researchers may define knowledge from the perspective of a state of mind, an object, a process, a condition of having access to information, or a capability which leads to different perceptions of managing knowledge within organisations (Alavi & Leidner, 2001).

Knowledge can also be defined according to its taxonomy. Taxonomies of knowledge refer to the classification of knowledge as being either tacit or explicit, and exists in either individual or collective forms (Alavi & Leidner, 2001). A distinction between the two categories of knowledge (i.e. tacit and

explicit knowledge) is necessary to have a better understanding of managing knowledge in organisations.

Tacit knowledge is difficult to express, formalise or share and exists in an intangible format (Sveiby, 1997). Tacit knowledge tends to be deeply rooted in personal insights, values and feelings that are not readily communicated or shared with others (Nonaka, 1994; Sveiby, 1997). It has both cognitive and technical elements, and possesses a personal quality that is difficult to communicate. It is also reflected in human actions and their interaction with the socially constructed environment (Argote & Ingram, 2000; De Long & Fahey, 2000; Nonaka, 1994; Sveiby, 1997; Yahya & Goh, 2002). The cognitive element refers to an individual's mental models comprising of mental maps, beliefs, paradigms, and viewpoints like individuals' beliefs on cause-effect relationships (Alavi & Leidner, 2001; Nonaka, 1994). The technical element refers to crafts and skills of know-how applicable to specific contexts such as engineering skills. Examples of tacit knowledge are knowledge of the best means of approaching clients (Alavi & Leidner, 2001), intuitions, insights, beliefs, hunches and values (Gore & Gore, 1999; Guth, 1996 cited in Yahya & Goh, 2002).

Explicit knowledge is knowledge expressed in a tangible format by words, numbers, or sounds. It can be codified and readily transmitted and it can be embedded in formal rules, tools, and processes such as databases, handbooks of instruction, and stored in firm's standard operating procedures (Davenport & Prusak, 2000; De Long & Fahey, 2000). Choo (2000) suggests that explicit knowledge may be either object-based or rule-based. Object-based knowledge is embodied in physical entities or represented using strings of symbols such those found in artifacts like products, patents, software codes, computer databases, technical drawings, tools, prototypes, films, and voice recordings. Knowledge is rule-based when it is codified into rules, routines and procedures (Choo, 2000). So explicit knowledge can be more easily identified, distributed, and measured in an organisation, compared to intangible knowledge, which resides in human minds. Due to these characteristics, explicit knowledge can often be reused within

organisations for decision making purposes, and will remain with the organisation after the knowledge creators have left the organisation (Choo, 2000).

Therefore, despite the confusion in the use of the terms data, information, and knowledge, it is suggested that data is the source of information within which the combination of data and information create knowledge. Knowledge provides a higher level of understanding and comprehension about data and information (Turban et al., 2005). So, knowledge can be seen as a series of both tangible and intangible elements, which are regarded as an essential part in the knowledge management domain (Alavi & Leidner, 2001); one which generates a central theme of discussion in the knowledge management literature. Knowledge conveys meaning, which makes it more valuable because it contains a series of elements that bring added value to products or services. It may be regarded as a bundle of experiences, values, insights, and expertise, and involves cognitive processes. It is embodied in individual language, stories, concepts, rules, tools, perceptions, beliefs, understandings, and value judgements that enable organisations to increase capacity for better decision making and action (Allee, 1997; De Long & Fahey, 2000; Nooteboom, 2000). Understanding the various perspectives of knowledge and their taxonomies gives insights for researchers to frame assumptions about knowledge that underlie the concept of knowledge management. Argote et al. (2003) suggest the nature of knowledge affects how it is stored and how it flows within and across the organisation, and the ability of an individual to share the knowledge as a consequence.

Despite various definitions and explanations of knowledge in the literature, the definition of knowledge which is adopted in this research is that suggested by Davenport and Prusak (2000). Their definition outlines three important characteristics of knowledge. Firstly, their definition offers a foundation for effective responses to a new situation through combining the concept of data and information. Secondly, the knowledge holder can be both sender and receiver of knowledge. Finally, knowledge not only tacit, it is also explicitly embedded in codified forms such as files, databases, organisational

standard operating procedures (SOPs) or organisational manuals. Both tacit and explicit knowledge can be easily lost unless organisations manage their knowledge resources effectively to sustain their competitive advantage. This requires organisations to design systematic pressures to manage and organise this valuable intangible asset.

2.2.3 What is Knowledge Management (KM)?

The growth of KM is attributed to organisational downsizing and technological development (Martensson, 2000). Martensson (2000) suggested that downsizing has led organisations to put KM strategies[2] in place in an effort to store and retain employees' knowledge for organisational future benefits. Technological developments have contributed to KM growth through information resources and the accelerating pace of technological change that is constantly increasing information and knowledge access. Given these two fundamental shifts, KM has emerged against a multi-disciplinary background in the early 1990s.

A continuing search for the precise meaning of KM is due to a lack of consensus on the means of KM (Gupta, Iyer, & Aronson, 2000). Scholars define KM as a conscious practice or process, or strategies and tactics utilised by organisations to manage their intellectual capital[3] resources. Thus management deals with a range of actions like creation, development, identification, capture, retrieval, transformation, application, protection and leverage of organisational knowledge to help organisations compete and improve their business performance (Bhatt, 2002; Gupta et al., 2000; Hansen, Nohria & Tierney, 1999; O'Dell & Grayson, 1998; Ruppel & Harrington, 2001; Schultze & Leidner, 2002; von Krogh, 1998; Yahya & Goh, 2002).

[2] Such as technology and systems to help capture the knowledge that resides in their employees' minds.

[3] Is defined as a stock of focused, organised information (knowledge) that the organisation can use for some productive purpose or a sum of human capital, and structural capital, including customer (relational) capital (Edvinsson & Sullivan, 1996, p. 357).

These actions and their roles within the organisational context aim to make knowledge visible by cultivating a knowledge intensive culture and developing knowledge infrastructures. As well as developing technical systems, KM actions also encourage people to interact and collaborate (Davenport & Prusak, 2000). Additionally, KM helps the organisation to achieve innovations in processes and products/services, effective decision making, and to adapt to the market, which leads to organisational creativity (Nayir & Uzuncarsili, 2008; Yahya & Goh, 2002). Therefore, in order to satisfy these requirements, KM has to ensure the right knowledge is available to the right processors (human and/or computer-based) at the right times in the right presentation for the right costs (Holsapple & Joshi, 2003). Since knowledge can be seen from various perspectives and taxonomies, the management of knowledge requires a synergistic combination of data and information processing capacity of information technologies, combined with the creative and innovative capacity of human beings (Malhotra, 2003).

Consequently, the various definitions of KM that have been presented by different scholars reveal that there is general agreement on what KM is. Even though scholars use different definitions of KM, they agree that the definitions of the term KM reveal a fundamental aspect of how organisations should design their KM activities or approaches to manage knowledge processes or facilitating knowledge related activities. A consistent theme in all definitions of KM is that it provides a framework that effectively builds on past experiences of the organisation and provides an avenue for new mechanisms for knowledge processes of sharing and creation to emerge. This is because one of the most important challenges facing today's organisations is the way to effectively manage this intangible resource because it is not symmetrically distributed within organisations (Davenport & Prusak, 2000). Therefore, the sharing of knowledge between individuals and departments within organisations is considered an essential process for achieving competitive advantage (Osterloh & Frey, 2000). Scholars agree that KM can be seen as a series of actions managing organisations' intellectual assets that enable

organisations to act intelligently, and in turn help them to improve business performance.

In general, there are two broad fundamental approaches of KM that form the central themes of discussion in the KM literature. These are the process and the practice approaches (Leidner, Alavi, & Kayworth, 2006). Other researchers refer to the former as a centralised KM and decision making approach (Yahya & Goh, 2002) or codification approach (Tsui, 2003). The latter is also referred to as the decentralised KM approach (Yahya & Goh, 2002) or the personalisation approach (Tsui, 2003).

The process approach assumes that the codification of organisational knowledge can be done through formalised control, processes, and technologies (Hansen et al., 1999). This approach sees the importance of information technologies such as intranets (Ruggles, 1998, cited in Leidner et al., 2006) in order to improve the management of knowledge processes within an organisational context (Leidner et al., 2006). KM processes involve knowledge accumulation (consisting of knowledge creation, knowledge acquisition and knowledge retention), knowledge sharing and knowledge utilisation (Nayir & Uzuncarsili, 2008; Nevis, DiBella & Gould, 1995). One can say that this approach requires organisations to implement policies and procedures of how knowledge is to be collected, stored, and disseminated throughout the organisation (Leidner et al., 2006).

The practice approach assumes that a great deal of organisational knowledge is tacit in nature and suggests that formal controls, processes, and technologies are not suitable for transmitting this type of understanding (Leidner et al., 2006). The central theme of this approach is to build social environments or communities of practice necessary to facilitate knowledge sharing and tacit understanding (De Long & Fahey, 2000; Hansen et al., 1999; Leidner et al., 2006). As such, the mechanisms offered by the practice approach have emphasised the importance of acceptable and desirable social environments or communities of practice as a means for organisational knowledge distribution. In contrast to the process approach of KM, the

practice approach requires a holistic view of the organisation and acknowledges that it is necessary to get employees to share what they know to make knowledge management work (Gupta & Govindarajan, 2000). More importantly, it is not the technology that makes knowledge management work, rather it is the processes that matter most (Gupta & Govindarajan, 2000).

This supports Yahya and Goh (2002) who suggest the focus of KM should emphasise the impact of HRM on KM activities. While information technology plays a significant role in enhancing the success of knowledge distribution within an organisation, HRM equally contributes to the success of KM initiatives because KM is an evolved form of HRM (Yahya & Goh, 2002). It is also unfair to say that the success of KM initiatives depends mainly on human resources/capital; it is better to claim that "people" should be the main contributors to the success of organisational knowledge management (Yahya & Goh, 2002). Further, Al-Alawi, Al-Marzooqi, and Mohammed (2007) suggest that the new approach to KM should involve people and action, and aims to create an environment where power equals sharing knowledge rather than keeping it.

However, the literature also provides evidence that research into KM has been dominated by the importance of knowledge management systems, which Yang (2008, p. 345) describes as "a perspective possibly over-emphasised by some scholars and practitioners", as a facilitation mechanism to support knowledge sharing in the organisation (Alavi, Kayworth, & Leidner, 2005; Ruppel & Harrington, 2001). Wang and Noe (2010) in their narrative literature review analysis[4] also come to a similar conclusion in relation to knowledge sharing research at the individual level of analysis. Storey and Barnett (2000) conclude that about 70% of the articles on KM in 1998 appeared in information technology or systems publications that focused on how to create the best technology to help organisations manage their intellectual capital.

[4] A comprehensive summary and discussion of literature on the topic but does not have any specific criteria for selecting literature to be included in the review.

Knowledge management systems (KMS) refer to a class of information systems (IT-based) developed to support and enhance organisational knowledge processes (Alavi et al., 2005). These authors suggest that applying technology (i.e. IT-based systems) in organisations will increase "weak ties" (e.g. informal and casual contacts among individuals) and the breadth of knowledge sharing. Chong, Holden, Wilhelmij and Schmidt, (2000) suggest that information technology (IT) provides support for organisational KM processes because most KM projects are focused on identifying and capturing knowledge, connecting people to people and sustaining organisational growth and learning abilities. Yahya and Goh (2002) suggest that IT acts as a supporting mechanism in human interactive and collaborative processes. While the role of KMS in KM initiatives is acknowledged, Yang (2008) suggests that the success of organisational KM implementation is showing greater recognition of the importance of human factors.

KMS has been criticised due to its inability to capture much of the embedded tacit knowledge, and the fact it forces individuals to think within a particular structure (De Long & Fahey, 2000; Leidner et al., 2006; von Krogh, 1998). Knowledge receivers may have difficulty in understanding the original context of the knowledge, if it is recorded on IT devices (Buchel & Raub, 2002). This is because knowledge is not a product of technology; but it is a human product. It is created through interaction between individuals, technology and organisational social contexts, which may encourage organisational learning to occur in organisations (Yahya & Goh, 2002; Yang, 2008). Previous research (e.g. Alavi et al., 2005; De Long & Fahey, 2000; O'Dell & Grayson, 1998) suggests the importance of organisational culture in knowledge management initiatives, because the extent to which individuals interact with others is influenced by the organisational culture to which they belong (Bhatt, 2002). Additionally, individuals are more intrinsically motivated to acquire and utilise knowledge, if they engage in face-to-face interactions because they report greater personal and social satisfaction from such interactions (Minbaeva et al., 2010).

Storey and Barnett (2000) suggest that management efforts to invest in the best technology turn out to be an ineffective approach to KM because the resultant KMS are overemphasised and fail to attend to organisational culture and human behaviours such as motivation, attention, and creativity. In a recent review, Wang and Noe (2010) suggest that both individual characteristics and organisations' interpersonal context can impede the sharing of knowledge through a KMS. Another view supporting an over-reliance on KMS is that of Roberston and Hammersley (2000). These authors suggest that the role of IT was initially meant for low level interactions and coordination within organisations, and therefore its role in KM initiatives was usually misused. This led to an assumption that the application of IT alone does not guarantee an increase in the breadth of knowledge sharing in order to improve "weak ties", because the knowledge (in particular tacit knowledge, that resides in human minds) requires an individual's ability to synthesise it and the motivation to engage in the process as well as providing sufficient opportunity to do so (Siemsen, Roth, & Balasubramanian, 2008, Minbaeva et al., 2010). Thus, individuals' capability in "organising" their knowledge plays a significant role in ensuring the success of KM initiatives. In a nutshell, effective KM requires a holistic approach that should also address the importance of developing HR knowledge sharing capability as well as cultivating a knowledge sharing environment for organisational competitive advantage.

2.2.4 Connecting HRM to Knowledge Management

The knowledge governance approach (KGA) suggests that HRM practices are an important antecedent of knowledge processes such as creation, sharing, utilisation (Foss, 2007; Minbaeva, 2008). This approach is characterised as a "distinctive, emerging approach that cuts across the fields of knowledge management, organisation studies, strategy and human resource management" (Foss, 2007, p. 29). It suggests that the deployment of governance mechanisms through formal organisational aspects such as structure, job design, rewards, accounting, information systems, standard

operating procedure and other coordination mechanisms influence knowledge processes (Foss, 2007; Grandori, 2001; Minbaeva, 2008).

The significance of HRM's role in ensuring the success of KM implementations has been given much attention in the literature. Bollinger and Smith (2001) and Soliman and Spooner (2000) suggest that HRM departments are in a better position to encourage and implement KM programmes since their responsibilities cut across all departmental boundaries. HRM can play a significant role in fostering the culture of sharing through the design of its practices (Bollinger & Smith, 2001; Greengard, 1998), and can also effectively coordinate and facilitate knowledge sharing through re-orientating existing HRM practices (Roberston & Hammersley, 2000). Several researchers have focused on how this can be accomplished. For example, Brauner and Becker (2006) suggest that additional effort for knowledge sharing would be minimal if knowledge sharing is incorporated in the design of HRM practices. Greengard (1998) suggests that a systematic orientation programme emphasising the integration of a new employee into the existing organisational knowledge sharing culture supports KM. Also, training and development programmes can focus on the development and integration of the importance of knowledge sharing for organisational performance to sustain competitiveness. This can be supported by HRM designing reward systems that nurture and encourage knowledge sharing, and educating employees about KM and its benefits (Greengard, 1998). While studying intra-MNC knowledge transfer research, Minbaeva (2008) found that HRM can influence knowledge sharing through practices that focus on improving employees' capability to share knowledge. This shows the importance of making it easy for knowledge sharing to occur by creating mechanisms that support it.

Cabrera and Cabrera (2005) have proposed a list of potential practices that may simultaneously affect the socio-psychological factors that facilitate knowledge sharing; namely, work design, selection, extensive collaboration training, formalised orientation and socialisation programmes, and performance appraisal. The important role of training and selection in

developing or increasing employees' ability and competence has also been acknowledged as a key component of HRM strategies that enhance knowledge sharing (Kelloway & Barling, 2000).

The relationship between HRM practices and organisational environment was found to have a positive and significant influence on individual motivation to share knowledge (Robertson & Hammersley, 2000). Collins and Smith's (2006) research on how commitment-based HRM practices (i.e. selection, training and development, and incentives) affect organisational social climates (i.e. trust, cooperation and shared codes and language) in high technology firms, confirmed this link. The partial mediation effects of organisational social climates on the relationships between HRM practices and knowledge exchange and combination, indicated an indirect influence of HRM practices on knowledge exchange and combination. Generally, their findings suggest that HRM practices enable the creation of conducive conditions that motivate employees to exchange and combine knowledge. This conclusion reinforces Roberston and Hammersley's (2000) finding that the structural and cultural factors, and their combination, facilitate knowledge management practices of knowledge intensive firms (KIFs).

To further demonstrate the competitive potential of knowledge as a strategic resource, the design of HRM practices in knowledge based organisations should focus on activities related to KM (Yahya & Goh, 2002). In research that aimed to demonstrate the linkages between HRM practices (training, decision making, performance appraisal, and compensation and reward) and KM processes (knowledge acquisition, knowledge documentation, knowledge transfer, knowledge creation, and knowledge application) in Malaysian knowledge based organisations, Yahya and Goh (2002) concluded that HRM practices play a unique role in knowledge based organisations. This is achieved when the practices emphasise quality, creativity, innovative thinking, leadership, problem solving skills, and have an input into directing the knowledge management efforts of employees.

This conclusion is supported by Hsu, Chen, Wang and Yu (2007), who identified the HRM practices that most effectively foster knowledge sharing among 172 research and development (R&D) teams in the Taiwan high-tech industry. Their findings suggest that HRM practices of potential-oriented staffing, team-based performance appraisal and career development encouraged employees to share knowledge with colleagues. However, they indicated that personal appraisals of team members caused employees to share less knowledge with others. Additionaly, organisational downsizing or restructuring, and reward systems failed to foster knowledge sharing. A case study on the contribution of HRM practices to the behaviour of employees being unwilling to share knowledge found that performance management, recruitment, and selection could all inhibit the sharing of knowledge (Currie & Kerrin, 2003). However, Currie and Kerrin's research suggests that within culturally distinctive organisations with well structured functional groups (i.e. a pharmaceutical company in UK), practices such as organisation development and career management mediated barriers to the sharing of knowledge across groups. These findings also add to our understanding of the ways in which HRM practices might contribute to more effective management of organisational knowledge processes in KIFs.

Research investigating the role of HRM practices in facilitating knowledge transfer within a Multinational Corporation (MNC) context found that staffing, training, promotion, compensation and appraisal practices, which improved receivers' absorptive capacity[5] significantly, influenced knowledge transfer (Minbaeva, 2005). However, implementations of these practices to support a learning environment were not found to significantly predict knowledge transfer. More recently, Minbaeva's (2008) study confirmed that practices like performance-based rewards and recognition, providing financial support for a degree earning program, and performance management positively and significantly influence individuals' extrinsic motivation to transfer knowledge.

[5] Defined as the ability of an individual to recognise the value of the new knowledge, assimilate it and use it for commercial ends (Cohen & Levinthal, 1990). According to Minbaeva, Pedersen, Bjorkman, Fey, and Park (2003) individual's ability (i.e. prior related knowledge) and motivation (i.e. intensity of efforts) are the key aspects of absorptive capacity.

Her research however is unable to confirm that such practices as job design, flexible working environment and career development influence individuals' intrinsic motivation to share knowledge. Minbaeva (2008) suggests that employees are intrinsically motivated to be involved in organisational activities for self-competent and self-determination reasons. Minbaeva's (2008) findings empirically demonstrate that extrinsic rewards encourage employees' knowledge sharing behaviours. These findings enrich the body of knowledge by signifying the important role of HRM in relation to knowledge management activities within organisation. It also provides evidence connecting HRM to knowledge management, particularly within knowledge sharing or transfer contexts. HRM participates in the nurturing of favourable cultural values that relate to knowledge sharing and developing HR capability for successful KM initiatives, though distinctive practices, through these themselves are impacted by the cultures of the organisation.

2.3 ORGANISATIONAL CULTURE AND KNOWLEDGE MANAGEMENT

Organisational behaviour scholars have defined culture as a set of shared cognitions, values, norms, beliefs and practices among individuals of a social unit (Alavi et al., 2005; Cooke & Rousseau, 1988; De Long & Fahey, 2000; Schein, 1985), as well as language, ideology, rituals, myths, and ceremonies (McDermott & O'Dell, 2001). Culture can also be defined as the collective programming of the mind which distinguishes the members of one category of people from another (Hofstede & Hofstede, 2004). Schein's (1985) conceptualisation of culture suggests the importance of artefacts; espoused beliefs; and underlying assumptions. Another similar model proposed by Trompenaars and Hampden-Turner (1998) divides culture into three layers, comprised of artefacts and products; norms and values; and implicit basic assumptions. These models assume that culture can be seen from a broader view of the visible aspects of cultural manifestations or artifacts, to a deeper level view of basic assumptions and beliefs. Consequently, culture is seen as

a shared pattern of meanings among individuals in a social unit that unite them together in shaping favourable and acceptable behavioural norms.

The influence of national culture on the peoples' values, attitudes and beliefs has been noted by scholars. For example, Lok and Crawford (2004) in their research emphasise the significant impact of the national culture on the formation of culture within organisations. Their findings reinforce Abdullah's (1996) suggestion that the culture of the country has a strong influence on the way people behave, and its plays a significant role in determining and developing the culture of an organisation. This is because individuals and groups are always reinterpreting their working life in terms of their perception of new or old sets of values. This leads to constantly evolving changes in actions that validate or negate existing interpretations. This suggests that the nature of organisational culture is determined by the interaction between the internal assets (cognitions) of individuals and the organisational environment (Abdullah, 1996; Lok & Crawford, 2004) to which they belong, suggesting that the term "organisational culture", cannot be separated from the concept of culture itself. The definition of organisational culture and its relationship to knowledge management are the subject of the next section.

2.3.1 What is Organisational Culture?

Organisational culture has been defined in a variety of ways (see Martin, 2002; Cooke and Rousseau, 1988). Some scholars define it as an interpretation of the meanings associated with cultural manifestations. It includes stories, rituals, formal and informal practices, language, physical arrangements (Martin, 2002); and common symbols, heroes, and rituals (Hofstede & Hofstede, 2004). These definitions see organisational culture as a series of symbolic elements that help to interpret the behaviours of organisational members.

One conceptual idea of organisational culture proposed by anthropologists sees culture as something that is comprised of a series of symbols. Anthropologists believe the symbol is a representation of the shared codes of

meaning like words, language, stories, icons, organisational logos or ceremonies that provide “meanings, evoke emotions, and drive men and women to action” (Cohen 1974 cited in Meek, 1988 p. 466). According to Meek (1988), anthropologists believe that culture is the product of negotiated and shared symbols and meanings that emerge from social interaction. The authors suggests that if culture is embedded in social interaction, thus influencing individuals’ behaviour, then culture can only be described and interpreted by observing their behaviour (Meek, 1988). Thus, this may invite a variety of vague interpretations by different people because the perception of culture is subjective and cognitive in nature. In other words, this view may not consider the possibility of conflict and ambiguity that may occur due to shifts in the beliefs, values and norms of the organisational members.

Social scientists, in contrast, view the culture of an organisation as consisting of sets of shared values and beliefs that emerge in the form of shared meanings and understandings of organisationally significant phenomena (Brown & Starkey, 1994 cited from Van Maanen, 1973). This is a continuous process and involves active interaction among organisational members on the basis of shared assumptions, values and artefacts (Alavi et al., 2005; Brown & Starkey, 1994 cited from Van Maanen, 1973). These definitions see organisational culture as a set of shared meaningful elements and involve active participation of the organisational members, explaining the existence of culture as a multidimensional concept.

The various definitions of organisational culture that have been conceptualised by different scholars therefore suggest the culture that exists within them helps organisations to successfully distinguish themselves from others. The sharing of meaningful underlying cultural elements among organisational members helps to shape the acceptable behavioural norms within an organisation. The common feature of these definitions is the notion that membership in a group implies that individuals will take on some values, beliefs and norms that are common to the organisation. Consequently, this leads to the idea that new staff can be assimilated in an organisation by the people who already work there. According to Cooke and Rousseau (1988),

social learning and socialisation processes help to develop individuals' cognitions and these processes expose them to an array of culture-bearing elements. Such elements include observable activities and interactions, communicated information, artefacts, and symbols that form the social experience. Individuals within an organisation voluntarily ally themselves with various cultural manifestations of a particular organisation in order to let it be known whether or not they belong to it. Thus, culture is not only reflected in the visible aspects of an organisation such as mission and objectives, it is also embedded in the behaviour of its people. The way people react, and their expectations towards each other, reflects a deeper embedded level of culture that exists in organisations. Such manifestations, for example, would include communicating in the same language, wearing corporate attire or uniforms, or sharing the same rituals and ceremonies.

Organisational culture, however, is considered as a subjective phenomenon and can be viewed differently by various people within the same organisation (Martin, 2002). This highlights the difficulty envisaged by most organisational culture researchers in choosing the appropriate theoretical perspective to be incorporated in their research. As such, Martin's (2002) multi-perspective frameworks of organisational culture (i.e. integration, differentiation, and fragmentation perspectives) provide a significant contribution to explaining the theoretical stance that guides most culture scholars.

The fragmentation perspective conceptualises the relationship among cultural manifestations as a complex, multiplicity of views (no consensus of meanings), allowing issues to emerge and voices to be heard, and focusing and accepting ambiguity as a predictable part of organisational life (Martin, 2002; Meyerson & Martin, 1987; Daymon, 2000). These features indicate that the cultures of organisations are created by individuals within an organisational context. The differentiation perspective, on the other hand, portrays organisational culture as mixed subcultures, each with their own distinctive values (Martin, 2002; Alavi et al., 2005), which create inconsistent interpretations within the same organisational context. The differentiation perspective sees consensus within an organisation only existing at lower

levels of analysis, known as “subcultures” (Martin, 2002). In other words, various local cultures may exist within the organisation that may have underlying prevailing shared values, norms and beliefs. This can lead to the experience of ambiguity due to differences perceived by organisational members in the interpretation of cultural elements. In addition, in its orientation towards ambiguity, this perspective channels its ambiguity to outside subcultures, and acknowledges non-leader (primarily group) generated sources of cultural elements (Meyerson & Martin, 1987).

Additionally, Martin et al. (1985 cited from Alavi et al., 2005 p. 196) describe organisations as umbrellas for collections of subcultures where leaders are not the only ones who generate values. Culture can also be influenced by other factors such as technology used by the employees and challenges faced by the organisation, as well as the organisation’s environment. To clarify this condition, Alavi et al. (2005) suggest that it is important to consider the dynamic interaction of cultural dimensions among organisational members in establishing a consensus of meanings. This is because cultural manifestations ought to be shared by individuals within a particular organisation as the shared meaningful elements making up the organisational culture are not restricted to any particular department, unit, job function or location (Keyton, 2005). Organisational culture can, thus, be portrayed as a dynamic interaction of multidimensional concepts among members that helps to frame acceptable and desirable organisational behavioural norms.

As such, the integration perspective offers an explanation of culture as having mutually consistent interpretations, drawing a consensus of meanings, that are clear and unambiguous (Martin, 2002). The integration perspective regards organisational culture as a homogeneous collection of values that act as an integrating mechanism that unite a different group of organisational members (Meyerson & Martin, 1987). This perspective also suggests that organisational culture can be managed and emphasises the importance of leaders as culture creators. Martin (2002) suggests that most of the organisational culture researchers agree with one of the three

theoretical perspectives to support their research. Thus, there is no right or wrong perspective to be applied into cultural research. Previous empirical studies into culture, regardless of which theoretical stance is being applied, acknowledge contribution from the growing body of cultural knowledge (Al-Alawi et al., 2007; Alavi et al., 2005; Daymon, 2000; Nayir & Uzuncarsili, 2008; Schein, 1985,1992). These studies provide evidence that each perspective complements the others.

While the distinction between organisational culture and organisational climate has been debated among researchers of organisational studies, Denison (1996) concludes that these two concepts address a common phenomenon that describes the creation and influence of social contexts in organisations. However it differs in terms of interpretations that bring meaning to them. Accordingly the author suggests that the distinction between culture and climate may be clear on the surface; however, it disappears at the deeper level, particularly in individual analytical studies. As such, Denison (1996) concludes this provides a strong foundation for integration rather than the assumption that culture and climate are different and non-overlapping occurrences.

2.3.2 Connecting Organisational Culture to Knowledge Management

According to Schein (1992), organisational culture affects the way in which people make decisions and ultimately the way in which they perceive, feel and act. Daymon (2000) argues that the formation of culture within an organisation is a continuous process. Organisational culture at any one time can influence how people set personal and professional goals, perform tasks and administer resources to achieve them. Therefore, the manifestations of organisational culture vary from one organisation to another and shift over time; how the culture of an organisation influences KM initiatives in one culture can be counter-productive in another.

The literature provides evidence that organisational culture is among the most difficult challenges in the success stories of organisational knowledge management initiatives (Al-Alawi et al., 2007; Alavi et al., 2005; De Long & Fahey, 2000; Janz & Prasarnphanich, 2003; Menkhoff, Wah, Hoong, & Evers, 2008; Nayir & Uzuncarsili, 2008; O'Dell & Grayson, 1998). In particular, Janz and Prasarnphanich (2003) suggest that organisational culture is the most important factor for successful knowledge management and organisational learning. They believe that corporate culture establishes values, beliefs, and work systems that both promote or impede knowledge creation and sharing. Additionally, Kim and Lee (2006) suggest that a supportive culture in terms of social or informal networking is vital for increasing employees' knowledge sharing capabilities as well as creating the environment for successful knowledge sharing. Then, people see sharing knowledge as natural; they do not feel they are being forced to share in an organisation that is nurturing a knowledge sharing culture (Nayir & Uzuncarsili, 2008). This is because culture shapes people's assumptions about what knowledge is important and distinguishes which knowledge is organisational and which is individual (De Long & Fahey, 2000). Thus, culture shapes the creation and adoption of new knowledge (Nayir & Uzuncarsili, 2008).

The cultural perspectives of KM outlined by De Long and Fahey (2000) signify the importance of building KM approaches that support and are congruent with the culture currently held by the organisation. Therefore, organisations that value knowledge of importance to their long term performance should have a deep understanding on the impact of culture towards knowledge sharing. This is because individuals bring their personal values, attitudes and beliefs to the workplace, thus, their level of sharing capabilities as well as knowledge sharing success may differ. Although IT and KM systems have been acknowledged as significant contributors to the success of knowledge leveraging processes, the important role of humans in knowledge sharing should not to be underrated as human resources are the heart of success stories of KM implementation. Thus, it is an important

challenge for organisations to establish an organisational culture that may develop and enhance their employees' capability to share knowledge for organisational competitiveness (Kim & Lee, 2006). The resource-based view that will be the subject of the next section has become a dominant perspective in explaining organisational competitiveness.

2.4 THE RESOURCE-BASED PERSPECTIVE OF ORGANISATIONS

This view emphasises the unique characteristics of individual firms and their ability to combine and use internal resources to generate their organisational competitive advantage (Barney, 1991; Wernerfelt, 1984). Organisations are said to have competitive advantage if their resources are valuable, rare, difficult to imitate and it is less likely that the resources can be substituted (Barney, 1991, 2000; Wernerfelt, 1984).

By drawing primarily on Porter's (1980, 1983) frameworks, the resource-based view makes assumptions about heterogeneity and immobility, with respect to the strategic resources the organisation controls and give it a competitive advantage. Porter's (1983) value chain model acknowledged the importance of HRM; however it does not explicitly recognise the significant role of HRM in creating and sustaining organisational performance (Boxall, 1996). The potential roles and contributions of HRM in meeting competitive demands were raised by Stajkovic and Luthans (1998) who noted the importance of developing and upgrading HR capabilities for organisational competitiveness was often neglected.

This is because employees' capabilities are one of the most important measures effecting organisational performance (Mayo, 2000). In the research linking the resource-based view and strategic HRM, Wright, McMahan, and McWilliams (1993) suggest that the human capital pool that is categorised as highly skilled and motivated has the greatest potential to constitute a source of sustainable competitive advantage. Strategic HRM scholars suggest that human resources through human capital resources (i.e. employees'

knowledge, skills, judgement and intelligence) and their unique capability to give rise to and be influenced by organisational unique historical conditions, causal ambiguity and social complexity, result in inimitable resources and provide competitive advantage (Barney & Wright, 1998; Wright et al., 1993).

According to Barney (1991), human resources contribute to competitive advantage through satisfying the criteria of being rare, valuable, non-substitutable and inimitable and that firms' success is achieved through the acquisition, development and utilisation of these resources. This is attributable to the individual and collective knowledge possessed by these human resources because the know-how and expertise within them is truly the most valuable asset (Lank, 1997; Sveiby, 1997). In the search for competitive advantage, strategic management scholars increasingly emphasise knowledge as a critical component (Grant, 1996; Matusik & Hill, 1998). This is because the basic source of organisational competitive advantage is the private knowledge that organisations hold. Machinery or capital, in contrast, almost always have their origins outside the organisation, and are most likely be imitated. Thus, organisational asymmetries in knowledge, competencies or capabilities possessed distinguish individual firms' performance (Conner & Prahalad, 1996).

The knowledge held by individuals must therefore be passed along to others for its value to be appropriated (Cabrera, Collins, & Salgado, 2006). For instance, in knowledge intensive firms (KIFs), (where the end products are typically not automated), cross pollination of expertise and skills between teams or units to gain customer loyalty is essential. Employees may learn new skills by recombining their existing and new knowledge related to customer loyalty, through sharing knowledge with other colleagues of other units. Employees' behaviours that share knowledge are critical for successful knowledge sharing, but their skills and feelings about sharing either individually or collectively often determine the extent to which they freely share and so influence an organisation's competitive advantage (Wright et al., 2001). These researchers suggest that organisations can influence the

human capital pool to elicit desired employee behaviour through the people management system or practices.

Reviewing the work of other scholars, Chen and Huang (2009) agree that organisations can influence and shape their employees' skills, attitudes and behaviours in relation to knowledge sharing through HR practices. These HR roles are supported by HR practices that can be also deeply embedded in a socially complex organisational culture or unique history. They may be path dependant, so it becomes very difficult for the practices to be imitated by others as the precise mechanisms and interactions that create the value are hard to identify (Barney & Wright, 1998; De Saa-Perez & Garcia-Falcon, 2002). Within the resource-based context, Boxall (1996) argues that HR policies and practices are sources of competitive advantage because their social complexity and historical sensitivity creates an isolation mechanism, making replication difficult. As such, Boxall (1996, p. 62) suggests that "HR practices should be designed to mutually reinforce the firm's (predetermined) choice of cost leadership, differentiation or focus as its competitive posture in what is seen as a powerful combination of 'internal' and 'external' fit".

The theoretical approach of Lado and Wilson (1994) also suggests that HRM is regarded as an important determinant for organisational competitiveness. These authors suggestion is reinforced by De Saa-Perez and Garcia-Falcon's (2002) confirmation on the significant role of HR practices and policies in the development of organisational capabilities (i.e. managerial, input-based, transformational, and output-based capabilities) and performance of HR managers of Spanish banks. Recent research by Hsu et al. (2007) adds to the body of literature through the significant effect of HR practices (i.e. potential-oriented staffing, career development and performance appraisal of individual team members) on employees' willingness to share knowledge for organisational competitiveness. Consequently from these findings, the importance of HRM practices and policies stand out as key strategic resources in generating both employees' and organisations' capabilities for competitive advantage.

The remainder of this chapter provides background information on knowledge sharing and the recent research on knowledge sharing by summarising associated relevant literature in this field. Human resource (HR) knowledge sharing capability is defined, and its relevance to the knowledge sharing success is discussed. The importance of human resources' ability, motivation and opportunity to share knowledge is established. The significant role of organisational culture and knowledge sharing success, are introduced and their significance to the research explained.

2.5 KNOWLEDGE SHARING

Knowledge sharing can be seen as a process, activity, or behaviour through which knowledge is exchanged among people in the organisation. Helmstadter (2003) uses the analogies or metaphors of "actors" and "stage" in explaining knowledge sharing processes, and thereafter these analogies will be used in the discussion of knowledge sharing. The array of knowledge sharing definitions reveal it as a dynamic process involving at least two people or groups of 'actors' that play the teaching and learning role on the 'stage' of knowledge sharing (Helmstadter, 2003). The process captures the activity of exchange of information, ideas, suggestions or employee's experiences, expertise and skills throughout the organisation (Bartol & Srivastava, 2002; Hsu, 2008; Lee, 2001; Lin, 2007; Nayir & Uzuncarsili, 2008). It involves the transfer or dissemination of knowledge from one person, or group to another (Hsu, 2008; Nayir & Uzuncarsili, 2008). Knowledge sharing can also be defined as individuals having the willingness to share with others the knowledge they have acquired or created (Bock, Zmud, Kim, & Lee, 2005). From the plethora of definitions that exist in the literature, the most pertinent definition of knowledge sharing which will be adopted in this research is the one by Hooff and Weenen (2004). They view knowledge sharing as processes consisting of employees' willingness to actively communicate their personal intellectual capital with colleagues (i.e. knowledge donating) and to actively consult with colleagues to learn from them (i.e. knowledge collecting).

The definition by Hooff and Weenen (2004) outlines three important characteristics of knowledge sharing. First, is the "actor" of knowledge sharing; both sender and receiver can be the same person at some time in the process; people act as both producers and consumers of knowledge, thereby suggesting that a one way perspective be adopted in the discussion of knowledge sharing for clarity purposes (Cummings & Teng, 2006). Secondly, motivation is not merely for disseminating the knowledge, it is also important in knowledge acquisition. Prior research has suggested that the motivation of knowledge providers is important for engaging in the effort and time required to transfer knowledge and overcome concerns about ownership of information (Davenport & Prusak, 2000; Hansen, Mors, & Lovas, 2005; Kostova, 1999). Similarly, researchers have begun to examine how motivational factors influence the extent to which recipients seek out, accept, and utilise external knowledge (Levin & Cross, 2004; Minbaeva et al., 2003; Szulanski, 1996). Thirdly, effective communication and consultation in knowledge sharing requires individual ability and opportunity to synthesise the knowledge and make it available for competitive advantage. This resonates with Bunstorf's (2003) view on the problems connected to the faithful encoding and decoding of knowledge and the effects of prior knowledge on interpretation. This view clearly indicates that successful and effective communication needs the willingness and ability of both actors to find a basic similarity of understanding, provided the opportunity for doing so is given by the organisation. Then knowledge sharing can occur.

From the social capital[6] theory point of view, ability or cognitive, motivation or relational, and opportunity or structural dimensions have been acknowledged as valuable resources to facilitate interactions among organisational members for successful collective action (Adler & Kwon, 2002; Nahapiet & Ghoshal, 1998). This is because social capital acknowledges the importance of social resources and relationships as employee knowledge sharing does not occur in isolation, but is embedded in social networks (Carter &

[6] Refers to the resources embedded within networks of human relationships (Nahapiet & Ghoshal, 1998). The theory posits that 'social capital provides the conditions necessary for knowledge exchange to occur ' (Kankanhalli, Tan, & Wei, 2005, p. 116).

Scarbrough, 2001; Wang & Noe, 2010). The ability or cognitive dimension describes “competencies and resources at the nodes of the network” (Adler & Kwon, 2002, p.26).

This dimension suggests that knowledge sharing is facilitated through shared codes and language, as well as the exchange of shared narratives among members of the network. This aims to create a mutual and similar understanding amongst individuals that may help them communicate effectively. The motivation or relational dimension describes network relationships in terms of trust, expectations and obligations, and identification with other individuals in the network. The opportunity or structural dimension explains employees’ accessibility for combining knowledge, and increasing the accuracy of each others’ understanding. This is supported by their own network of ties, and the configurations or connections among organisational members (Nahapiet & Ghoshal, 1998). In a narrow and practical sense, sharing knowledge is almost impossible even if employees have the set of abilities and motivation to share their valuable knowledge, unless supportive and convincing opportunities are available and provided by organisations. Thus, the presence of all three factors (ability, motivation and opportunity) for employees’ knowledge sharing capability is necessary because each of them complements the others’ roles (Minbaeva et al., 2010; Siemsen et al., 2008).

A number of studies demonstrate that knowledge sharing provides many advantages, from helping the organisation maintain its sustainable competitive advantage to enhancing organisational performance. Organisations regard knowledge sharing as an important process, because, if successful, it results in shared intellectual capital (Liao et al., 2007). Bartol and Srivastava (2002) suggest that knowledge sharing is critical to knowledge creation, organisational learning, and performance achievement. As such, knowledge sharing has been widely recognised as an effective approach to maintaining an organisation’s sustainable competitive advantage (Hislop, 2003; Song, 2008; O’Dell & Grayson, 1998; Wright, Dunford, & Snell, 2001). Additionally, organisational performance is enhanced when people communicate common or uncommon sources of information, effective

practices, insights, experiences, preferences, and lessons taught (Liao et al., 2007). Previous research has also suggested that knowledge sharing connects organisational members to new information, expertise, and ideas that may not be obtained inside their community or organisation (Nooteboom, 2000). Knowledge can be utilised if the receiver is aware and makes sense of the knowledge received as well as freely applying the knowledge (Lim & Klobas, 2000).

Research into knowledge sharing has received extensive attention from various disciplines of interest investigating how organisational, team and individual characteristics influence individual levels of knowledge sharing (e.g. Alavi & Leidner, 2001; Alavi et al., 2005; Ruppel & Harrington, 2001; Kogut & Zander, 1992; Nonaka, 1994; Nonaka & Takeuchi, 1995; Spender & Grant, 1996; Bartol & Srivastava, 2002; Oltra, 2005; Currie & Kerrin, 2003; Foss, Minbaeva, Pedersen, & Reinholt, 2009; Hislop, 2003; Minbaeva et al., 2010; Quigley, Tesluk, Locke, & Bartol, 2007; Wasko & Faraj, 2005; Yahya & Goh, 2002). This is because the extent to which knowledge sharing occurs between employees influences both knowledge at the team and the organisational levels (Wang & Noe, 2010). In their narrative-analysis of the literature, Wang and Noe (2010) identify five broad categories emphasised in knowledge sharing research, namely the organisational context, interpersonal and team characteristics, cultural characteristics, individual characteristics, and motivational factors.

Organisational context emphasises the importance of culture and climate, management support, rewards and incentives, and the structure of the organisation for knowledge sharing. Wang and Noe (2010) introduce factors such as cohesiveness, communication and leadership style, diversity and social networks in explaining the effect of interpersonal and team characteristics on knowledge sharing. The national culture and differences in communication language are the cultural characteristics that can create challenges in facilitating knowledge sharing among employees in multinational organisations and international subsidiaries. Individual personality, attitude, level of anxiety, curiosity and comfort, the ability to use

computers, education level, work experiences and self-rated expertise are among the individual characteristics that may influence the knowledge sharing process. Motivational factors such as perceived benefits and costs, interpersonal trust and justice, and beliefs on knowledge ownership are also acknowledged as an important driver for employees' knowledge sharing.

Research to date has concentrated on several characteristics of these categories namely interpersonal issues[7], HRM and cultural issues, and moderating roles, as well as the integration of these characteristics. All these aim to improve organisational innovativeness and performance, leading to sustainable competitive advantage (Al-Alawi et al., 2007; Alavi et al.,2005; Bock et al., 2005; Cummings & Teng, 2003; Currie & Kerrin, 2003; Hislop, 2003; Lin, 2007, Minbaeva et al., 2003, Minbaeva, 2008; Minbaeva et al., 2010; Nayir & Uzuncarsili, 2007; Robertson & Hammersley, 2000; Ruppel & Harrington, 2001; Collins & Smith, 2006; Yahya & Goh, 2000). These research streams have highlighted the significant role of HRM in relation to knowledge management initiatives, from helping organisations to foster an acceptable and desirable organisational sharing culture that motivates employees to share knowledge, and to developing and enhancing employees' capability for organisational competitiveness through such practices as selection, training and development, rewards, performance management systems, career management, job design and promotion. Carter and Scarbrough (2001) suggest that HRM can contribute to the achievement of positive knowledge management outcomes by moving beyond its traditional approach of concentrating on short term objectives, towards a reorientation of its practices that emphasises long term development of skills and culture within organisations.

[7] Such as motivation, ability, self-efficacy and absorptive capacity aspects of both sender and receiver to share knowledge.

2.6 PREVIOUS RESEARCH ON KNOWLEDGE SHARING

Despite extensive research on a wide variety of potential ways that HRM practices may facilitate successful knowledge sharing by employees (e.g. Cabrera & Cabrera, 2005; Collins & Smith, 2006; Currie & Kerrin, 2003; Hsu et al., 2007; Oltra, 2005; Minbaeva, 2005, 2008, Roberston & Hammersley, 2000; Yahya & Goh, 2000), the list of potential practices and expectations has grown without reaching any consensus on "one universally applicable truth" or "best practice approach" (Carter & Scarbrough, 2001, p. 217). For instance, while selection, and performance appraisal have been found to significantly influence positive knowledge sharing outcomes (Hsu et al., 2007; Robertson & Hammersley, 2000), Currie and Kerrin's (2003) findings suggested that these practices were inhibiting knowledge sharing among employees. While it is accepted that using more HRM practices leads to better performance, Minbaeva's (2008) research found that this notion may not apply when it comes to bridging HRM and knowledge management. This makes it difficult to choose one practice to follow for improved knowledge sharing.

In a way to help the organisations conceptualising the best practices, Wang and Noe (2010) suggest that the role of cultural characteristics be given closer attention in developing practices for facilitating knowledge sharing. To expand the framework linking HRM practices and knowledge sharing within a cultural context, Minbaeva (2008) has suggested a moderating role for individuals' ability, motivation and opportunity to knowledge share. The author suggests that the recent emphasis on the importance of individuals' role in leveraging knowledge to better explain the "emergence, existence, persistence and change of organisational level variables such as knowledge transfer" (p. 712) or sharing has prompted an interest in this mediating role. Oltra (2005) too has focussed on the individual worker with the suggestion that increasing employee capability to knowledge enhancers should be a significant role of strategic HRM practices aimed at knowledge-leveraging. Generally, employees' capability to share knowledge requires their ability,

motivation and opportunity to acquire new knowledge and share the synthesised knowledge with others (e.g. Andrawina, Govindaraju, Samadhi, & Sudirman, 2008, Kim & Lee, 2006). In short, it is the capacity of employees to organise their intellectual resources through combining and synthesising newly acquired and existing knowledge prior to sharing with others. Therefore, the human attributes incorporating ability, motivation and opportunity can be considered important variables in developing employees' knowledge sharing capability.

Kelloway and Barling (2000) have put forward a framework linking these human factors variables with knowledge work and the necessary conditions for them to work best. Their model suggests that employees' utilisation of knowledge at work is enhanced by their own willingness and by organisational practices that enable employees to increase their skills and competencies, and willingness. Organisations also need to then provide employees with opportunities to exploit and invest the knowledge gained. These authors suggest that organisational characteristics such as organisational culture in terms of expectations and rewards, transformational leadership, job design and social interaction are identified as potential predictors that support the development of these human attributes. Empirical examination by Minbaeva et al. (2010) and Siemsen et al. (2008) confirm the link between these human attributes or employees' knowledge sharing capability with knowledge sharing outcomes. In particular, the recent research on explaining intra-organisational knowledge transfer at the individual level by Minbaeva et al. (2010) indicates that employees' ability, intrinsic motivation (person-to-person interaction), and opportunities provided by organisations are significant drivers of knowledge transfer within an organisation. Similarly, Siemsen et al. (2008) confirm the complementary roles of these attributes. This research that introduced and empirically tested a constraining-factor model (CFM), aimed to determine the bottleneck or constraining factor among the motivation, ability and opportunity factors that impact on the degree of knowledge sharing. It found that resource investment in motivation and ability may have no knowledge sharing payoffs if

employees are not provided with opportunities to do so. Lack of opportunity was the major barrier. They further suggested that motivation, ability and opportunity should not be independently addressed, but that practices encompass all in a dynamic and systematic manner so that knowledge sharing outcomes are assured.

However, the link between these individual attributes or knowledge sharing capability and potential predictors such as organisational culture requires further clarification. Oltra (2005) suggests that human resources and cultural issues are the key drivers for successful KM initiatives. It is necessary then to identify the favourable cultural values of organisational members that should underlie HRM practices and support their development, as well as to increase employees' knowledge sharing capability so that they can effectively contribute to knowledge sharing success for organisational competitiveness. This is because a favourable and acceptable sharing environment is expected to influence employees' knowledge sharing behaviour directly, as well as their motivation to share knowledge (Cabrera & Cabrera, 2005, Minbaeva, 2008). The identification of employees' distinctive cultural values that favour and enhance HR capability to share knowledge, and that should underlie the implementation of HRM practices, could provide important insights on further linking HRM with the resource-based view (RBV) of knowledge sharing. This identification could also shed light on one of the rectifying mechanisms of organisational knowledge sharing deficiencies. Although Kelloway and Barling (2000) have proposed a link between organisational culture, human attributes (or knowledge sharing capability) and knowledge outcomes, Minbaeva et al.'s (2010) and Siemsen et al.'s (2008) studies however, have not confirmed the relationships between organisational culture and employee knowledge sharing capability and success. This dissertation builds directly on these three studies, as well as initiating ways of conceptualising best facilitation approach for employees' knowledge sharing, it is also intended to bridge the HRM and the resource-based views in explaining employee knowledge sharing success for organisational competitiveness.

2.7 HUMAN RESOURCE (EMPLOYEE) KNOWLEDGE SHARING CAPABILITY

Within the knowledge sharing context, researchers have confirmed that employees' capability to share knowledge is crucial for successful knowledge management outcomes (Andrawina et al., 2008; Kelloway & Barling, 2000; Kim & Lee, 2006; Oltra, 2005; Reus, 2004). Kim and Lee (2006) describe employees' capability to share knowledge as the ability to acquire knowledge from others and share their work experience, expertise, know-how and contextual information with other employees through both formal and informal interactions. In a similar vein, Andrawina et al. (2008) define knowledge sharing capability as the employees' ability to be involved in both knowledge donating and collecting in terms of experiences, ideas, expertise and information. These definitions are consistent with the concept of knowledge sharing adopted for this research suggesting that successful knowledge sharing will, to some extent, depend on employees' capacity to organise the knowledge resources that they received through a network of ties (refer to 2.5 for definition of knowledge sharing). This includes such activities as synthesising and utilising the newly acquired knowledge and deciding how many knowledge resources will need to be transferred/shared or are relevant to be adopted by others. However, the presence of ties and capacity to "organise" are not a sufficient explanation as to why people are the vehicles/media for leveraging knowledge. Employees also need to be motivated to do so.

Minbaeva et al., (2010, p.5) describe this combination as "conditions of individual actions". Their research identifies ability, motivation and opportunity as the component for conditions of individual actions for achieving knowledge management outcomes. From the social capital approach, individuals' abilities, motivations and opportunities have been suggested to be a key mechanism for achieving knowledge flows within an organisation (Adler & Kwon, 2002, Wright et al., 2001). This tripartite schema has been widely discussed in explaining the proximate causes of social capital exchange (Adler & Kwon, 2002, Nahapiet & Ghoshal, 1998). These

research streams help to define knowledge sharing capability as the employees' capacity to "organise" their knowledge resources for successful knowledge sharing. This capacity is a function of employees' ability, motivation and opportunity to share knowledge.

The ability component of knowledge sharing capability refers to the cognitive dimension of shared codes and language or shared beliefs among organisational members (Adler & Kwon, 2002; Nahapiet & Ghoshal, 1998). The development of human resource sharing capability also requires that employees need to be motivated to share knowledge (Argote et al., 2003; Gupta & Govindarajan, 2000). This component is a function of the relational dimension of obligations and expectations among organisational members (Nahapiet & Ghoshal, 1998). The presence of motivation that binds the parties through shared beliefs is not sufficient as an explanation of why individuals are the medium for sharing knowledge. Individuals also need to have opportunity to do so. Opportunity to share knowledge signifies the presence of a network of ties among organisational members that creates the possibility of knowledge and expertise flow within organisation (Adler & Kwon, 2002; Nahapiet & Ghoshal, 1998).

The role of employee capability in the discussion of knowledge sharing is important because people can be the main contributors to the success of knowledge management initiatives (Carter & Scarbrough, 2001; Hendriks, 1999; Hislop, 2003; Olomolaiye & Egbu, 2006; Oltra, 2005; Storey & Barnett, 2000; Yahya & Goh, 2002). Thus, if employee capability to share knowledge is a key determinant of successful knowledge sharing, then it is critical that organisations develop and increase employees' capability to share knowledge. Several researchers stress factors related to human attributes as a contributor to knowledge sharing behaviours and attitude, which may lead to successful knowledge sharing. For example, Hislop (2003) noted that a significant number of empirical research studies into knowledge sharing acknowledged that successful knowledge management initiatives depended on human willingness to share their knowledge and expertise. Lin (2007) confirms that human attributes of enjoyment in helping others and

possessing knowledge self-efficacy significantly influence knowledge sharing processes. MacInnis, Moorman and Jaworski (1991) suggest that deficiencies in ability limit the capacity of an individual to process information. Additionally, the extent to which the employee uses interaction opportunities influences knowledge transfer (Minbaeva et al., 2010). Scholars agree that employees are likely to engage in knowledge sharing to the extent that they have the ability, motivation and opportunity to do so (Minbaeve et al., 2010; Kelloway & Barling, 2000; Lin, 2007; MacInnis et al., 1991). As such, to some extent, knowledge sharing success relies, on the employees' capability to share knowledge, because "humans and knowledge are two concepts inextricably joined" (Oltra, 2005, p. 71).

2.7.1 The Ability to Share Knowledge

Developing the ability to share knowledge signifies the need for employees to be able to understand (organise) the knowledge that they receive through networks of ties. This requires the development of a shared code and language because it facilitates the identification, combination and interpretation of information (Nahapiet & Ghoshal, 1998). Shared codes and language comprise common sets of symbols, terms, jargon and understandings that allow individuals to communicate effectively with one another (Nahapiet & Ghoshal, 1998). The literature acknowledges that employees' ability is greatly influenced by their prior related knowledge, beliefs, basic assumptions, intensity of effort and richness of the pre-existing knowledge structure (Cohen & Levinthal, 1990; De Long & Fahey, 2000; Kim, 2001; Kwok & Gao, 2005).

Thus, the employees' abilities also refer to their educational background, basic skills, relevant prior experience and up-to-date information on knowledge domains that represent the prior related knowledge (Cohen & Levinthal, 1990; Szulanski, 1996, 2000; Minbaeva et al., 2003). Kim (2001) defines prior related knowledge as the existing knowledge available within the organisation possessed by an individual. Currie and Kerrin (2003), noted

that the failure of employees to appreciate the tacit assumptions of knowledge and differences in their level of prior related knowledge impact on their inability to share knowledge with others. In contrast, individuals with high confidence in their ability to provide valuable knowledge are more likely to share knowledge related to accomplishment of specific tasks (Lin, 2007).

In the knowledge sharing process, individuals' prior knowledge, as identified by Bunstorf (2003), influences knowledge sharing actors in the interpretation of knowledge and helps them to configure some similarities of understanding. Individuals' prior knowledge is very important in facilitating the development and combination of information for the creation of shared beliefs to close gaps in understanding (Gupta & Govindarajan, 2000; Nahapiet & Ghoshal, 1998). However, the presence of shared language and vocabulary, while necessary, are not a sufficient explanation of how employees are the medium for transferring knowledge. Motivation is also a major factor in the sharing of knowledge (Bock & Kim, 2002; Bock et al., 2005; Minbaeva et al., 2010).

2.7.2 The Motivation to Share Knowledge

The transfer of knowledge, particularly the tacit components, requires an ease of communication and intimacy between transfer parties to avoid knowledge exchanges being difficult (Szulanski, 1996). For example, a knowledge source may be reluctant to share knowledge because they are unwilling to devote the time and resources required, or they fear losing their power, status and expertise (Szulanski, 1996; Willman, O'Creevy, Nicholson & Soane, 2001). Similarly, knowledge recipients may be unwilling to accept knowledge from a knowledge source because of a lack of interest in the use of that knowledge. This results in foot dragging, passivity, feigned acceptance or outright rejection in the implementation and use of the knowledge (Szulanski, 1996).

Several researchers define motivation to share as individuals' inner drive or willingness to share knowledge with others/peers (Boudreau, Hopp, McClain, & Thomas, 2003; Siemsen et al., 2008). Thus, individuals with strong

personal motivation are likely to share knowledge with others (Stenmark, 2001, cited in Ipe, 2003). Lin (2007) argues that employees who believe that they can contribute to organisational performance by sharing their knowledge will develop a positive willingness to share and to receive knowledge. Motivational factors that influence knowledge sharing between individuals can be divided into internal (intrinsic) and external (extrinsic) factors.

The internal or intrinsic motivational perspective states that human behaviour "is evoked by the need of employees to feel competence and self-determination in dealing with their environment" (Deci, 1975, cited in Lin, 2007 p. 139). Based on the work of other researchers, Lin (2007) suggests that competence may help to motivate employees share knowledge with others. The external or extrinsic motivational factors, on the other hand, are related to goal driven reasons such as rewards or benefits or punishment earned when performing an activity (Lin, 2007; Kwok & Goa, 2005). According to Lin (2007), the extrinsic motivational perspective sees individuals' behaviour as driven by perceived values and the benefits of the action. Similarly, Kwok and Goa (2005) refer to it as achieving some separable consequence from required performance activities. They suggest that extrinsically motivated behaviour would not occur spontaneously and that it would have to be prompted by a request or by some externally administered consequences, such as receipt of a reward or the avoidance of punishment. Employee extrinsic motivation to share knowledge is an outcome of a belief that is based on employee perceptions of the value of being associated with knowledge exchange (Osterloh & Frey, 2000; Kankanhalli et al., 2005).

Prior research suggests that factors such as knowledge self-efficacy, intellectual pursuits, enjoyment in helping others, considering solving problems as challenging or pleasurable activities, perceived power attached to the knowledge and reciprocity have been recognised as intrinsic motivational drivers for employees to engage in knowledge sharing (Ipe, 2003; Lin, 2007; Wasko & Faraj, 2005). Empirical examination on the effects of intrinsic and extrinsic motivation on employee knowledge sharing

intentions at 50 large organisations in Taiwan showed that knowledge self-efficacy and enjoyment in helping others were significant influences on employees' attitudes and intention to share knowledge with others (Lin, 2007). Similarly, Bock et al. (2005) suggested that individuals' attitudes towards knowledge sharing are influenced by relational motivators or anticipated reciprocal relationships. An anticipated reciprocal relationship refers to employees' desires to continue ongoing relationships with other organisational members, in particular with respect to knowledge sharing (Bock et al., 2005). Similarly, Adler and Kwon (2002, p.25) suggest that the norm of generalised reciprocity is essential to bind communities and to resolve problems of collective action and suggest that generalised reciprocity "transforms individuals from self-seeking and egocentric agents with little sense of obligation to others into members of a community with shared interests, a common identity, and a commitment to the common good". This suggests that employees with intrinsic values would value a working environment that emphasises equal status, democracy, independence, good leader-member relationships, minimum supervisory control, a less hierarchical structure and the practice of open communication (Hsu et al., 2007).

In a knowledge sharing context, the discussion of extrinsic motivational factors, which are commonly identified by researchers, focus upon factors such as organisational reward systems (monetary and non-monetary incentives), avoidance of punishment, building reputation, reciprocal benefits, and points toward promotion and positive relationship with the recipient (Bartol & Srivastava, 2002; Bock et al., 2005; Ipe, 2003; Kwok & Goa, 2005; Lin, 2007). Bartol and Srivastava (2002) suggest that monetary organisational reward systems (e.g., merit pay plans, rewards based on collective performance, profit sharing, gain sharing, and employee stock options) and non-monetary rewards (e.g., dinner gift certificates, praise and public recognition) are likely to be effective in creating a feeling of cooperation, ownership, and commitment among employees and, therefore, would be helpful in enhancing knowledge sharing.

However, empirical findings from previous studies have concluded that monetary incentives (extrinsic rewards) hinder the formation of positive attitudes toward knowledge sharing (Bock et al., 2005; Lin, 2007). These findings support Kwok and Goa's (2005) argument that emphasised the effective circumstances of extrinsic motivational strategy. Extrinsic motivational strategies can be effectively applied for tasks with less creativity that require close supervision or have detailed rules about the behaviours to be performed. This suggests that extrinsic motivational factors are meaningful to motivate individuals who are performing routine work that is quantitatively measured. Therefore, managers can easily award or withhold some external rewards or punishment according to employees' actual performance (Kwok & Goa, 2005). However, sharing personal insights with others is a test of human nature that creates a cooperation dilemma, requires individuals' creativity, lasting commitment and interactive learning processes (Cabrera & Cabrera, 2002; Kwok & Goa, 2005). Considering such characteristics of knowledge sharing, it is expected that extrinsic rewards or punishment may have a negative effect on knowledge sharing. However, non-monetary incentives such as reciprocal benefits or other forms of recognition (e.g., building reputation, public recognition, pride, status) may influence favourable attitudes towards knowledge sharing (Lin, 2007).

These findings provide evidence to support Nahapiet and Ghoshal's (1998) contention that obligations and expectations among organisational members enhance employees' motivation to voluntarily share their knowledge and expertise. Based on other researchers' work, they concur that obligations create "expectations developed within particular personal relationships" and suggest that obligations and expectations are key factors for employees' motivation to combine and exchange knowledge (Nahapiet & Ghoshal, 1998, p. 255). To understand the central features of this social capital dimension, Widen-Wulff and Ginman (2004) suggest the importance of considering the behavioural engagement aspects of groups and cooperative behaviour among group members**.** Tyler and Blader's (2001) group engagement model identifies intentions to stay or leave (turnover) as one of the cooperative

behaviours explaining people's motivation for engaging in groups. Their findings confirm that status related to pride has a positive and direct influence on turnover intentions. This suggests for this context that employees' motivation to share knowledge could reasonably relate to employees' turnover intention. The literature reveals that organisations' retention rates show significant increases when employees experience high job satisfaction such as when their work expectations are fulfilled. Their willingness to share knowledge is widely recognised as part of this (Hislop, 2003; Roberston & Hammersley, 2000). Several researchers have emphasised the role of employee loyalty in knowledge sharing because the departure of workers from the organisation results in the loss of organisational specific tacit knowledge (Alvesson, 2004; Hislop, 2003). As such, employee loyalty can be a key factor in the employees' obligations and expectations to share knowledge. In other words, employees' motivation to share can be considered as a function of employee loyalty towards an organisation. The development of human resource sharing capability also requires that organisational members have an opportunity to share knowledge, and for this they need to have contextual mechanisms that enable such actions to occur. There needs to be a network of ties within organisations that allow the flow of knowledge and expertise.

2.7.3 The Opportunity to Share Knowledge

According to Nahapiet and Ghoshal (1998, p. 252), networks of ties provide the channels for information and resource transmission. These authors suggest that "network ties influence both access to parties for combining and exchanging knowledge and anticipation of value through such exchange". A study conducted by Tsai and Ghoshal (1998) provided empirical evidence that social interaction ties (network ties) influence inter-unit resource exchange and combination. Chiu, Hsu and Wang (2006) also concluded that the more social interactions undertaken by exchange partners, the greater the intensity, frequency, and breadth of information exchanged. Researchers agree that a strong network of ties is significantly related to the receipt of

useful knowledge and is necessary for the transfer of very complex knowledge (Hansen, 1999; Levin & Cross, 2004). Levin and Cross (2004) noted that strong ties are required to ensure that the knowledge seeker understands the newly acquired knowledge and utilises it for organisational benefits. According to Nahapiet and Ghoshal (1998), to build intellectual capital, organisations provide opportunities to share knowledge through the development of links among networks of specialists within an organisation. The opportunity of employees to share knowledge can be accessed by structural factors such as frequency, intensity, multiplexity, and a configuration of ties among organisational members (Adler & Kwon, 2002; Nahapiet & Ghoshal, 1998). The opportunity component of knowledge sharing capability therefore refers to the structural dimension of the network of ties among organisational members (Nahapiet & Ghoshal, 1998).

Different proxies have been used by several researchers in explaining opportunity to share knowledge (Minbaeva et al., 2010; Reus, 2004; Siemsen et al., 2008). These research has confirmed the significant effect of the opportunity to share knowledge (through acquisition integration, rich communication and time) for knowledge sharing (Reus, 2004; Siemsen et al., 2008). Minbaeva et al. (2010), on the other hand, suggest network initiatives, orientation programmes, team building exercises, and initiatives supporting a knowledge-friendly corporate culture as the opportunities that can be offered by the organisation to facilitate knowledge sharing.

Within the organisational context, organisational members interact through day-to-day conversations and meetings. More formal contacts occur through HRM practices at training sessions or career management meetings that give organisations' members the opportunity to share tacit knowledge (Currie & Kerrin, 2003). Accordingly, Currie and Kerrin (2003) suggest that organisational development and career management mediates barriers to knowledge sharing. Organisational development programmes such as training sessions provide opportunities for members across functional units to meet and share their valuable thoughts or insights. Career management may offer knowledge sharing across functionally based teams. Similarly, assigning

individuals to perform jobs in different functional units or on job rotation allows them to develop social networking with other functional members, and is a HRM practice that can be deliberately used to foster knowledge sharing as well as its original enrichment roles (Currie & Kerrin, 2003).

Therefore, meeting people in these development programmes and experiencing different work placements builds up network contacts. Through social networking, interpersonal connections or strong ties (the Chinese concept of 'guanxi') may develop (Hsu et al., 2007). An employees' network of social ties (both external and internal ties to the company) creates an opportunity for them to leverage and act together with their contact resources (Adler & Kwon, 2002). Additionally, Hsu et al. (2007) suggest that people are more willing to share personal thoughts and insights with familiar and friendly groups. This empirical evidence demonstrates that HRM practices through career management/development and organisational development/training catalyse the establishment of new ties across sections within organisation. Appropriate HRM practices that support the formation of new ties define the opportunities that will facilitate employees' knowledge sharing within organisations. The opportunity to share knowledge, thus, depends on the HRM practices that allow and support a new network of internal ties, which develop with intense and frequent social exchange.

2.8 THE IMPORTANCE OF EMPLOYEE'S CAPABILITY IN THE KNOWLEDGE SHARING PROCESSES

Research into knowledge sharing has consistently identified issues associated with the antecedents or enablers and facilitation mechanisms for best achieving knowledge management processes (e.g. Al-Alawi et al., 2007; Alavi et al., 2005; Currie & Kerrin, 2003; Collins & Smith, 2006; De Long & Fahey, 2000; Minbaeva, 2005, 2008; Nayir & Uzuncarsili, 2008; Oltra, 2005; Ruppel & Harrington, 2001). Much has been written about information technology and organisational issues in relation to those issues, but little attention is paid in the literature to the nature of knowledge, which can

influence the way it is to be shared, or the lack of employees' capabilities to share knowledge. While the significance of HRM in knowledge management has been debated, most studies of knowledge management initiatives have concluded that people or human resources are the heart of knowledge management philosophy (Hislop, 2002; 2003; Hendricks, 1999; Robertson & Hammersley, 2000; Yahya & Goh, 2002).

Examples of knowledge sharing outcomes that indicate the importance of understanding the nature of knowledge and role of employees' capabilities include reports of difficulties in transferring knowledge or what Szulanski (1996) referred to as internal stickiness, and the complexity of knowledge (Hansen, 1999) that creates the connotation described by Hislop (2002, 2003) as embodied and embrained. These connotations suggest that knowledge is deeply related to individuals' specific roles, skills, and cognitive abilities, and socially and culturally embedded in their behaviours and practices they undertake. This supports Hislop's (2003) views that the nature and characteristics of knowledge, which comprise both tacit and explicit components, influence the way it is to be shared. Similarly, the limited role of information technology systems in the sharing of knowledge is also frequently apparent, as are reports of the inability to codify tacit knowledge into explicit knowledge (Hislop, 2002). Further, Wang and Noe (2010) noted that lack of consideration of how organisational, interpersonal context and individual characteristics influence knowledge sharing is an important reason for the failure of the KMS to facilitate knowledge sharing. These research streams suggest employees have difficulty in accessing organisational knowledge.

The importance of the role accorded to information technology, which dominates the discussion theme of the knowledge management literature, is based on the "objectivist" epistemological perspective on knowledge. Hislop (2002) challenges such an assumption by focusing particularly on Cook and Brown's (1999, cited in Hislop 2002) "epistemology of practice" view, which perceives that the intrinsic character of knowledge makes it difficult to be shared via information technology. This epistemology of practice perspective suggests that knowledge is very much related to individuals' specific roles; it

is culturally and socially embedded in their behaviours, and even difficult to explain due to its unspecified nature as interpretations are based on individuals' subjective understandings (Hislop, 2002). The objectivist view however depicts tacit and explicit knowledge as representing two pure and separable forms of knowledge, which possess completely different characteristics.

In relation to knowledge sharing, the objectivist view represents the "conduit" model also referred to as the postal or transmitter-receiver model (Bolisani & Scarso, 2000 cited in Hislop 2002). The model emphasises that knowledge is shared by the unidirectional transferral of explicit codified knowledge from an isolated sender to a separate receiver, resulting in a greater role for information technology systems in supporting explicit knowledge sharing. Cook and Brown (1999, cited in Hislop 2002) contrast this view with epistemology of practice, also referred as the relational perspective on knowledge (Scarbrough, 1999). This view outlines why individuals should develop an appreciation of the tacit assumptions and values on which all knowledge is based. Bolisani and Scarco (2000, cited in Hislop 2002) referred to this as the "language game" model of knowledge sharing, due to the importance of dialogue and language to such processes. These authors suggest that knowledge is more subjective (inseparable between tacit and explicit, and comprised of the interactions of individuals and their behaviours), and constructed by each individual. They recognise that it requires much internalisation before it is useful for organisational or community benefits. The practice from the epistemological perspective therefore stresses the importance of human agency or HR capability in the development and use of knowledge for investment in knowledge management initiatives to get payoff (Hislop, 2002).

Employees reluctant to consider knowledge sharing as a learning process may be indicating their inability to successfully share knowledge (Wang & Noe, 2010), which may result in work inefficiencies, increased errors or falling work quality. Wang and Noe (2010) further suggest that highly learning-oriented employees regard learning capability as vital for successful

knowledge-leveraging processes. This is because knowledge sharing creates an opportunity to expand employees' understanding on the knowledge and provides a solution to the ineffective communication that can occur when there are differences in the degree of knowledge similarity that creates understanding among transfer parties (Wang & Noe, 2010). Based on other researchers' work, Boland and Tenkasi (1995, p. 358) noted that effective knowledge sharing requires that the "point of view of the other be realistically imagined" and that individuals have the capacity to see from another's point of view. This is important because the unique but diverse knowledge held by individuals within an organisation has to be available and incorporated by others (Boland & Tenkasi, 1995). In a similar vein, Prichard (2000) suggests that knowing is an integration process that involves active agents bringing their embodied/embedded knowledge to bear on a focal point. This includes the HR capabilities of "authoring knowledge content, codifying knowledge into 'knowledge object' by adding context, contributing personal knowledge to the organisational database, sharing personal knowledge in formal interaction with or across teams or work unit, or in informal interactions among individual" (Hsu, Ju, Yen & Chang, 2007, p. 155). Thus, HR capability to explicitly make the embrained and embedded knowledge codifiable is vital for successful knowledge sharing. Hislop (2002) suggests that the nature of tacit knowledge requires employees who possess the knowledge to willingly share and communicate it with others, and there is the potential for negative effects arising from employees' job exit. High turnover rates cause organisations to be at a risk of losing their valuable knowledge; in particular, organisations that employ highly specialised employees who are sought-after market resources (Robertson & Hammersley, 2000). The retention of employees with valuable knowledge is as important as organisational attempts to induce employees to share knowledge (Hislop, 2003).

Following reporting of these important employees' capability factors on knowledge sharing in relation to the nature of knowledge in the literature, scholars recommend several approaches to enhance employees' capability for leveraging knowledge within organisation. The recommended approaches

in the literature include ensuring high levels of employee commitment and job satisfaction, providing employees with training and development, and avoiding internal conflict as well as nourishing positive attitudes towards knowledge sharing by encouraging active involvement in knowledge sharing activities (Bontis & Serenko, 2007; Hislop, 2002; Robertson & Hammersley, 2000; Scarbrough, 1998). Investigating HRM policies and such practices as performance appraisal and reward systems, fairness in decision making, job design and security, as well as fostering a sharing culture that affects knowledge sharing attitudes and behaviours are also recommended (Hislop, 2002). As well as addressing the myriad of problems associated with knowledge sharing, these approaches are strongly connected with both employees' capabilities and the nature of knowledge, which strongly influence the way it is to be shared in the work environment.

2.9 KNOWLEDGE SHARING SUCCESS

The primary goal for any knowledge sharing is to successfully share the sender's knowledge to the recipient (Cummings & Teng, 2003). It is therefore, important to include an assessment of employees' perceptions of knowledge sharing success in order to demonstrate whether employees' ability, motivation and opportunity to share knowledge and the organisational values of collaboration, innovativeness, formalisation, autonomy, expertise and trust are relevant considerations for knowledge sharing success.

According to Cummings and Teng (2003), four different approaches have been used by researchers in defining transfer or sharing success as dependent variables. Reviewing the work of other researchers, they suggest that at the most basic level of analysis, knowledge sharing success was defined as the number of knowledge transfers engaged in during a certain period of time. Another approach, which was applied in conjunction with a communication model in identifying knowledge transfer sticky factors, defined knowledge sharing success as the extent to which recipients are satisfied with the shared knowledge, which is on time, within budget and produces a

satisfied recipient. While the technology transfer and innovation perspective sees knowledge sharing success as the re-creation of senders' knowledge in the recipients' context, this approach was challenged due to knowledge embeddedness characteristics (Cummings & Teng, 2003). The fourth approach in defining knowledge sharing success comes, the perspective of knowledge internalisation from the institutional theory. This perspective defines sharing success as the extent to which a recipient obtains ownership of, commitment to, and satisfaction with the shared knowledge.

From these reviews, a set of standards used to measure perceived knowledge sharing success was included by Cummings and Teng (2003) in their study of both domestic and international R&D partners of 15 industries across three forms of governance in the United States. Amongst a broad range of measurements, these researchers included a measure of participants' perceptions of their knowledge sharing success by asking them about their commitment to, ownership of and satisfaction with the shared/transferred knowledge. This standard provides a starting point for measurements of participants' perceptions of knowledge sharing success in this research.

For the purpose of this research, Cummings and Teng's (2003) knowledge sharing success measurement was utilised to capture respondents' perceptions of knowledge internalisation within the organisational context, though some wording has been altered to avoid misunderstanding by Malaysian participants.

2.10 THE CONCEPTUAL IDEA OF ORGANISATIONAL CULTURE

To generate the concept of organisational culture for this study, Schein (1985) argues that organisational culture is the pattern of shared basic assumptions that need to be learned by the organisational members in order to solve the problems of external adaptation and internal integration. He suggests that the shared basic assumptions considered valid and which work

well, need to be taught to new members in order to guide them in solving any such problems and integrating well into the new workplace. This definition reveals that the basic problems faced by any culture are to customize accurately the organisation's mission and objectives and expected behaviour of its members. Therefore, it is important to understand the role of shared underlying basic assumptions influencing collective thought processes that shape beliefs and behaviour in order to successfully engender cultural change.

Additionally, Schein (1985) claims that culture is something that can be managed and changed. He conceptualises the culture of an organisation as being homogenous, and as differentiating it from other organisations (Martin, 2002; Avinson & Myers, 1995). Homogeneity unites every individual in the organisation. This underlying value may be of assistance to the organisation in overcoming various demands due to globalisation. In other words, this conceptual idea treats organisational culture as a set of variables that can be manipulated by management (Meek, 1988), and portrays it as an intangible asset belonging to a particular organisation.

The multidimensional construct comprising the elements of basic assumptions, values, and artefacts is another important idea in relation to Schein's definition of culture. This set of elements guides the behaviour of particular organisations to act diligently in their industries, and to create a mechanism for individually identifying with others at work (Keyton, 2005). At the deepest level, culture consists of basic assumptions. It refers to beliefs that are taken for granted; that are subtle, abstract, implicit and deeply embedded; and that are formed over time through the strategies developed by the group members. These are also to be shared by new members in order to solve problems (Keyton, 2005; Van Maanen & Barley, 1985). In fact, if basic assumptions are embedded and strongly held by the organisational members, they are often difficult to articulate and individuals may act with so little variation that any other action is unthinkable (Schein, 2004; Keyton, 2005). Therefore, these basic assumptions which have been noted as the basic source for organisational values and actions (Schein, 2004), represent

interpretive schemes that guide people to shape the basis for collective action by distinguishing situations and making sense of ongoing events, activities, and human relationships (Van Maanen & Barley, 1985). Thus, it can be said that a specific culture exists when organisational members accept and share these interpretative schemes.

The second level of the organisation culture concept represents values (Alavi et al., 2005). Values refer to desirable strategies, goals, principles, or qualities that are able to create guidelines for organisational behaviour (Keyton, 2005). According to De Long and Fahey (2000) and Alavi et al. (2005), values can also be seen as a set of social norms that guide individuals to act and communicate appropriately within the interaction context. They represent more visible manifestations of culture and reflect genuine individual beliefs. For example, Posner and Munson (1979, p. 10) suggest that:

> "Values describe what individuals consider to be important. They represent wants, preferences, desires; likes and dislikes for particular things, conditions, or situations. Values describe the things or ideas that matter the most to an individual, the things that he or she will make sacrifices for in order to obtain. Values consist of opinions about what is right, fair, just, or desirable. They are one of the crucial keys to understanding behaviour since our actions are strongly influenced by preferred beliefs."

Thus, values give a basis for making wise judgments in creating solutions for particular situations. In other words, values signify the organisational members' beliefs that are considered vital in generating an accepted behaviour; values identify a particular organisational culture. For example, if organisations deeply hold a value that intellectual resources are important, then certain behaviours and actions can be predicted. Employees are likely to make these resources available for other organisational members by sharing them. Values that inspire individuals to regard intellectual resources

as key organisational assets for sustaining competitive advantage are more likely to motivate behaviours that shape useful understanding about knowledge sharing and utilisation.

Organisational culture is also manifested through artefacts that represent the most visible or tangible elements of culture, yet they may be difficult to explain. These include all events such as what one sees, hears, and experiences when one encounters an unknown culture, as well as the architecture of its physical environment, products, artistic creation, technology, rituals, ceremony, language, myths, norms, customs, and heroes (Keyton, 2005; Schein, 2004; Pettigrew, 1979).

As such, this multi-dimensional cultural manifestation provides a clear interpretation of pivotal underlying assumptions and beliefs in helping the organisation to shape the desirable and acceptable norms. In doing so, it is important to acknowledge the dynamic interaction among these dimensions so that the formation and establishment of culture is not mainly dominated by the values or basic assumptions or beliefs of individuals or those of groups or leaders. It is acknowledged that the concept of shared meaning is essential in uniting the organisational members to face the challenges. However, from a more realistic point of view, organisations are umbrellas for the natural accumulation of multi-cultural elements, formed from diverse sources, each with distinctive values and are unlikely to have a similar culture (Alavi et al., 2005).

Therefore, in order to be united, organisations have to consider these differences by striking a balance between the leaders' and the organisational members' interpretations of multi-dimensional cultural elements within the organisational context. This aims to clarify ambiguous conditions related to the establishment and formation of exhibit-favourable culture in organisations. Robertson and Swan (2003) suggest that ambiguity is evident in culture and continuously fluctuates over time. Therefore, clarifying ambiguous conditions is a continuous process that requires senior management to actively find ways to reduce this ambiguity. The organisation

may wish to continue to establish flexible working surroundings that reject the imposition of formalised systems and routines (Robertson & Swan, 2003). Thus, it is critical for the organisation to foster a cultural environment that shapes perceptions of autonomy (Roberston & Swan, 2003) and manage these flexibilities wisely. Therefore, understanding the multidimensional culture in organisations creates access to learning the basic beliefs, values, and norms that are shared among the individuals within the entire organisation. This will lead to proper and tolerable judgments that are necessarily required in addressing various kinds of organisational experiences.

Based on these characteristics of basic assumptions, values and artefacts, values have been chosen to conceptualise organisational culture in this study. There are several reasons for this. First, values are more easily studied than basic assumptions, which are invisible, and artefacts are hard to decipher (Schein, 1985). Second, the majority of prior theoretical work aimed at exploring the linkage between culture and social group's behaviours and actions was done in terms of value-based theories of culture (Posner & Munson, 1979). Three prime examples of this are Quinn and Rohrbaugh's (1981, 1983) Competing Values Framework, Cook and Lafferty's (1987, cited from Khan, Usoro, & Majewski, 2010) Organisational Culture Inventory and Cameron and Quinn's (1999, cited from Berrio, 2003) Organisational Culture Assessment Instrument (OCAI). Finally, prior work examining organisational culture's influences on KM activities has also been done primarily using value-based conceptualisations of culture (for example: Alavi et al., 2005; Bock et al., 2005; Lee & Choi, 2001, Ruppel & Harrington, 2001). As such, this research intends to build upon prior work by exploring further the relationship between organisational culture manifested through values with employee knowledge sharing capability to share knowledge as well as its success within organisation.

2.10.1 Critical Success Values for Knowledge Sharing

A review of the literature on studies conducted on organisational culture related to knowledge management identifies several attempts to model the organisational culture of knowledge management processes as well as a number of identifiable organisational variables believed to influence the performance of knowledge management processes in particular knowledge sharing.

One of the attempts to model and explain the culture for successful knowledge sharing within an organisation was conducted by Al-Alawi et al. (2007). A combination of surveys and interviews were used as a means of data collection in examining the influence of certain organisational culture factors on successful knowledge sharing within organisation. This empirical evidence suggests organisational culture is a predictor to successful knowledge sharing in both public and private organisations in the Kingdom of Bahrain. The identified organisational culture values included trust, communication, information systems, rewards and organisational structure. The findings provide a useful description of the interactions that take place within organisational knowledge sharing success. The results gained in this study, however are affected by the sampling (Al-Alawi et al., 2007). Management and non-management values were not distinguished and the participant organisations were not knowledge intensive organisations. This methodological limitation poses concerns over the usefulness and validity of the organisational culture model in explaining successful knowledge sharing within organisations in the 'real world' of knowledge intensive organisations. However, it does succeed in highlighting the important link between desirable values and knowledge sharing outcomes.

Ruppel and Harrington's (2001) study illustrates how intranet implementation and employees' knowledge sharing facilitation are transferred into results through the influence of different cultural dimensions. Specifically, their research focused on how the groups' cultures, each with distinctive values, influenced knowledge sharing, which was facilitated by the IT-based system

(intranet). The research, which surveyed United States information systems managers randomly selected from a national mailing list, was based on the framework for organisational effectiveness involving competing values developed by Quinn and Rohrbaugh (1981, cited in Ruppel & Harrington, 2001). Extending Quinn and Rohrbaugh's (1981) organisational effectiveness competing values include group, hierarchical, rational and development dimension, Ruppel and Harrington (2001) agree that these dimensions are important but not all encompassing. They further argue for the importance of an ethical and trusting culture for knowledge sharing and include this dimension in their research. Their research examined this ethical dimension along with the other competing values with respect to intranet implementation. They suggested that the cultural value of trust, concern for other people (ethical culture), flexibility and innovation (development culture) and policies, procedures and information management (hierarchical culture) influenced the organisational intranet implementation, which in turn facilitated knowledge sharing. The findings succeed in once again highlighting important relationships between desirable and acceptable cultural values and internet implementation that facilitate knowledge sharing within organisation. However those perceptions defined the management perceptions of the values and attitudes that employees have to follow for the success of intranet implementation. This concern limits the usefulness and validity of the organisational culture model in explaining knowledge sharing success within the 'employee' context, particularly in knowledge intensive organisations.

A recent study conducted by Nayir and Uzuncarsili (2008) aimed to demonstrate how effective knowledge management practices of accumulation, sharing, and utilisation of knowledge, combined with a unique corporate culture, helped the Sarkuysan company to manage the challenges of globalisation. In particular, their research focused on how the combination of unique values and knowledge management practices (knowledge accumulation, sharing and utilisation) has helped the company to become successful. The research, that utilised a case study approach to explain the influences of cultural determinants on the success of knowledge

management, identified the organisational values of trust, loyalty and storytelling as the prominent values that influenced knowledge sharing, but the methodology limits the possibility of making general conclusions. However, their findings suggest that culture shapes the interpretation of essential knowledge management for a company to become successful. In other words, cultural values are a source of knowledge for the company, which leads to certain actions and therefore, the behaviour of organisational members can be predicted. Thus, organisations may form a lasting knowledge management culture by appropriately using knowledge management practices with a distinctive corporate culture. The former focuses on how the combination of unique values and knowledge management practices (knowledge accumulation, sharing and utilisation) help the company to become successful. While the organisational culture values derived from this research are of considerable interest, once again those perceptions are the top management's perceptions of the cultural values. However it does succeed in, once again, emphasising the acceptable and desirable cultural values for successful knowledge sharing within organisation.

An alternative approach to understanding the influence of organisational culture on knowledge sharing comes from the field of knowledge creation research. Lee and Choi (2003) carried out research focusing on the relationship of various values associated with a related concept of knowledge creation. The research, which adopts a combination of interviews and surveys as a means of data collection, examines the relationships among knowledge management factors such as enablers, processes, and organisational performance. One of the knowledge management enablers examined was the organisational values of collaboration, trust, and learning. A six-point Likert scale questionnaire, which was written in the Korean language, was administered to 1,425 middle managers, who had the job title of department chief in 147 Korean Stock Exchange organisations. Findings from this research suggest that an organisational culture defined by collaboration, trust, and learning has a significant relationship with knowledge

creation processes. They conclude that shaping an organisation's cultural factors is important in facilitating knowledge creation processes. While the findings succeeded in providing useful interactions that take place within knowledge management processes context, the organisational culture values defined by collaboration, trust and learning were still those perceptions of management or heads of department. Those perceptions represent the view that employees have to follow and have respect for the factors management have linked to successful knowledge creation within the organisation.

In addition to attempts to model the nature of organisational culture, researchers in this field have also identified specific characteristics of organisational culture in knowledge intensive organisations that relate to knowledge management outcomes from the employees' perspective. Alavi et al. (2005) carried out research aimed at exploring how organisational culture, as evidenced in perceived organisational values of expertise, formalisation, innovativeness, collaboration, and autonomy, influenced the use and outcomes of the use of knowledge management tools. They used a case study methodology in exploring their research question. The study was conducted at a global high-tech firm that provides multiple lines of information-related products and services to a broad range of customers. The sample for this study consisted of 20 employees who had been with the company from 6 months to 17 years. Findings from this research show that organisational members' values influenced the use of knowledge management technologies and the outcomes of such use. They concluded that cultural values influenced a firm's approaches to knowledge management practices. While the generalisability of the findings is limited, the identified cultural values are the perceptions of employees in knowledge intensive firms, and thus of considerable interest to this study.

Despite a list of identifiable cultural values that are of considerable interest, the most intuitive and logical approach to the measurement of those organisational culture values believed to influence the success of knowledge sharing is to integrate existing measures that have shown relationships between them. While the methodological disparity of the organisational

culture values identified in the previous studies do not facilitate this approach, Alavi et al.'s (2005) research offers direction for the present study. Their research systematically focuses on the knowledge intensive firm (KIF) and has recognised the prominent organisational values that describe their distinctive nature. Knowledge intensive firms can be referred to as firms or organisations where most of their work is said to be of an intellectual nature and where knowledge and human capital (i.e. qualified and well-educated employees form the major part of the workforce) are emphasised, as opposed to physical or financial inputs (Alvesson, 2004; Swart & Kinnie, 2003). Swart and Kinnie (2003) noted that KIF's success in gaining competitive advantage is greatly dependent on the human[8] and social capital that creates unique trading assets. Knowledge sharing is perceived to be important for KIFs to gain the most from their intellectual capital in achieving their competitive advantage (Swart & Kinnie, 2003).

According to Alvesson (1998) and Weggeman (1997), cited in Kemp, Moerman, & Prieto, 2001, p. 253) the factors that are evident within the distinctive nature of KIFs are the importance of creativity and innovation; relatively high educational levels and high degree of professionalisation on the part of most employees; realisation that the critical assets (intellectual capital) reside in the minds of employees and in networks, customer relationships and systems for supplying services; heavy dependence on the loyalty of key personnel; and, tendency to measure success not solely by financial criteria. Alavi et al.'s (2005) cultural model with the additional value of trust was adapted for this present research. Trust is included in the model because prior research indicates that trust is an important factor in facilitating knowledge sharing (Abrams, Cross, Lesser, & Levin, 2003; Al-Alawi et al., 2007; Lee & Choi, 2003; Nayir & Uzuncarsili, 2007; Renzl, 2008; Ruppel & Harrington, 2001; Sveiby & Simons, 2002). Thus, the identified values include collaboration, innovativeness, formalisation, autonomy, expertise, and trust.

[8] Human capital includes individual tacit and explicit knowledge brought into the organisation through its knowledge workers and social capital refers to knowledge that is embedded within the organisational relationships and routine (Swart & Kinnie, 2003, p. 60).

Previous research suggests that collaboration is important for new knowledge to be created, shared or exchanged among different members (Alavi et al., 2005, Lee & Choi, 2003; Sveiby & Simons, 2002). In particular, Lee and Choi (2003) suggest that a collaborative culture affects knowledge creation through increasing knowledge exchange by reducing fear and increasing openness to other members. Knowledge sharing is intrinsically valued in the collaborative relationships (Kaser & Miles, 2002). These authors used the term “knowledge activists” for those involved in knowledge exchange and suggested that knowledge activists accept responsibility for organisational success and treat the work of other members as theirs within collaborative relationships. Reviewing the work of other scholars, Lee and Choi (2003) further assert that collaboration between organisational members also highlights individual differences and the ability to overcome barriers on these differences may facilitate knowledge sharing (Cummings & Teng, 2003). As such, collaboration emphasises the degree of support, help and cooperation among organisational members (Lee & Choi, 2003). Sveiby and Simons (2002) confirmed the significance of collaborative climate through the cultural elements of collaboration and trust in the effectiveness of organisational knowledge work by examining both public and private sector organisations. This conclusion is backed by Yang’s (2008) findings that reported on a significant and strongly positive relationship between collaborative culture and knowledge sharing effectiveness.

Knowledge sharing effectiveness can also be achieved if management promotes and supports the development of trust within an organisation. Trust describes both peers and management reciprocal faith in others’ intention and confidence in the ability of others towards organisational goals (Cook & Wall, 1980). According to Abrams et al. (2003), trust has been identified as the element that links the development of strong ties and knowledge sharing. While new product development (NPD) researchers suggest the insignificant role of trust in explaining variations of knowledge sharing in product development projects (e.g. Bakker, Leenders, Gabbay, Kratzer, & Engelen, 2006), Nayir and Uzuncarsili’s (2008) case study underlined the importance

of trust in the success of Sarkuysan. Kaser and Miles (2002) in their case studies also confirmed that knowledge activists' or employees' knowledge sharing success occurred within the trusting relationships, in which employees found satisfaction in voluntarily sharing knowledge with others. The significance of trust in knowledge creation has also been confirmed by Lee and Choi (2003) in their research on the organisational sectors of Korean manufacturing, service and financial businesses.

The literature further indicates that trust between co-workers and trust towards management are believed to have a strong influence on the achievement of knowledge sharing (Abrams et al., 2003; Al-Alawi et al., 2007, Renzl, 2005; Nayir & Uzuncarsili, 2007). In particular, Abrams et al. (2003) suggest that trust facilitates the dissemination of knowledge within organisation by minimising misunderstanding between the sender and recipient of knowledge. Consequently, as well as improving the level of knowledge assimilation among employees, it makes it more likely that the recipient will use it. In addition, Adler and Kwon (2002) suggest that trust among employees and the extent to which organisational members identify themselves with the organisation influences employees' motivation to share knowledge.

Employees are also motivated to share knowledge if the organisation fosters the cultural value that emphasises free-flowing information within (Bock et al., 2005). Reviewing the work of other scholars, they concur that in an innovative working environment, employees are more likely to share their creativity and know-how with others. This may be due to the nature of innovativeness that reflects the perception of learning that emphasises open communication flows, reasoned risk-taking and encourages reward for change and creativity (Bock et al., 2005). According to Alavi et al. (2005) organisations may support the development of an innovative culture by encouraging their employees to be involved in departmental gatherings where cross pollination of ideas or insights across departments or communities can occur.

Further evidence for the impact innovativeness may have on knowledge sharing comes from research on creativity. Based on the work of other researchers, Lee and Choi (2003) agreed that the way knowledge is created and shared has a significant role in organisational creativity. The extent to which the organisation successfully implements creative ideas describes innovation within the context of creativity (Amabile, Conti, Coon, Lazenby, & Herron, 1996). Their research focused on the development and validation of a new instrument, KEYS, for measuring climate for creativity. It examined the perceptions of work environments that can influence the creative work within organisations, and indicates that higher levels of innovativeness in a work project correlates significantly with the organisational encouragement subscale. Organisational encouragement emphasises the important aspects of risk taking and idea generation, fair and supportive evaluation of new ideas, rewards and recognition, the flow of collaborative ideas across an organisation as well as participative management and decision making. Lee and Choi's (2003) research confirmed that organisational creativity, by accepting ideas and allowing the diffusion of knowledge, affects organisational performance.

Nevertheless, the individual's level of freedom to be innovative will be restricted to some extent by the value placed upon certain rules and procedures to which they have to adhere. According to Lee and Choi (2003), the extent to which decisions and working relationships are governed by formal rules, standard policies and procedures reflects the value placed upon formalisation. Alavi et al. (2005), however, suggest that formalisation engenders a correct way of doing things and can act as a structured model for the success of knowledge management processes. This contrasts with Lee and Choi (2003) whose view is that new knowledge creation is restricted if too many formal rules dominate an organisation as they affect the cultures that support knowledge creation.

As such, autonomy must be provided for people who should be able to step out of their designated roles as they wish in the pursuit of new knowledge in order to cultivate innovative culture (Merali, 2000 as cited in Hall, 2001).

Hackman and Oldham's (1975) job characteristics job model describes autonomy as the extent to which the job holders are granted substantial freedom, independence and discretion in scheduling and determining the way in which jobs are performed, as well as the feeling of being responsible for the job outcomes. In examining the determinants of individual engagement in knowledge sharing, Cabrera et al. (2006) confirm that job autonomy significantly predicts employees' participation in knowledge sharing. According to these authors, highly responsible employees find sharing ideas and knowledge with others will grant them more efficient ways to perform jobs. The absence of precise instructions and procedures allow autonomous employees to explore greater opportunities in searching more creative ways in carrying out their jobs (Cabrera et al., 2006).

The literature further suggests that autonomy is critical to knowledge workers as knowledge work includes the exercise of professional judgment in the effort to solve complex and unique problems (Alavi et al., 2005; Janz & Prasarnphanich, 2003, Roberston & Hammersley, 2000). In particular, Roberston and Hammersley (2000) assert that knowledge workers are willing to share knowledge by containing their jealousy, and not guarding their personal knowledge and expertise in a culture that emphasises a highly autonomous and egalitarian culture, characterised by high trust. They are trusted to apply their own discretion in scheduling their own work and expected to work inter disciplinary by willingly demonstrating their ability to share knowledge for successful project implementation. By doing so, they are creating an internal market for expertise or professional pride where their particular expertise is highly regarded across organisational projects (Roberston & Hammersley, 2000).

Expertise gives specific individuals status and recognition within an organisation as other staff seek answers from them. However, this status does not necessarily relate to their position in the organisation (Alavi et al., 2005). Although New Product Development researchers suggest that employees may lose advantage and status through knowledge codification and sharing (Willman et al., 2001), this was not the case in research

examining factors influencing individuals contributing knowledge in electronic network of practices. Wasko and Faraj (2005) confirmed that employees share their knowledge in the electronic network of practice to be known as an expert when they see this activity may enhance their professional reputations. Therefore, the value placed upon expertise can be seen as a motivator for less well-known organisational members to share their ideas with other expert communities, in order to gain recognition as an expert. This aims to advance their progress in the hierarchy of expertise within an organisational context (Alavi et al., 2005).

2.11 CHAPTER CONCLUSION

The Chapter has introduced relevant literature from research into HRM, KM and organisational culture that provided direction of this study. It has outlined a broad range of previous research on knowledge sharing, covering both HRM and organisational factors, in order to develop a framework of the present study. The discussion started with definitions of key concepts to provide a clear context of research operational variables. Their relationships in relation to employees' knowledge sharing are then discussed. The chapter then described employees' knowledge sharing capability and its importance for successful knowledge sharing within the organisational context; the conceptual idea of organisational culture; the previous studies into organisational culture related to knowledge management; and, methodological approaches used by previous researchers. These elaborations provide a further foundation and direction for the study of knowledge sharing of a particular organisation for successful knowledge sharing. This has led to the framework of the present research, depicting the relationships between perceived level of knowledge sharing capability, perceptions of organisational culture, and perceptions of knowledge sharing success. A detailed discussion on this conceptual framework is the subject of the next chapter.

CHAPTER 3: FRAMING THE PRESENT STUDY

3.1 INTRODUCTION

The literature points to knowledge management's pivotal role in the achievement of organisational competitive advantage. However, successful KM initiatives depend on the success of knowledge sharing. Although various potential ways of facilitating successful knowledge sharing have been suggested, HRM has been given more attention in facilitating the process (Bollinger & Smith, 2001; Brauner & Becker, 2006; Minbaeva, 2005; 2008; Soliman & Spooner, 2000). This is because KM and HRM are linked disciplines (Minbaeva, 2005). This is reinforced through the role of HRM in helping organisations to foster a knowledge-friendly culture that motivates employees to share knowledge as well as to develop human capital for organisational competitiveness through appropriate practices.

A substantial number of potential practices or "knowledge-driven HRM practices" (Minbaeva, 2005, p. 127) for enhancing knowledge-related outcomes has been proposed. Nonetheless, identifying which HRM practices are appropriate/best for achieving knowledge-related outcomes within organisation has not yet been achieved. As discussed in Chapter 2, recent studies have suggested two factors to be considered in developing and designing knowledge-driven practices: human attributes or capability (i.e. incorporating of ability, motivation and opportunity to share) and organisational culture (Minbaeva, 2008; Minbaeva et al., 2010; Oltra, 2005; Wang & Noe, 2010). If human attributes (termed knowledge sharing capability in this study) and organisational culture are important for HRM practices in the achievement of positive knowledge sharing outcomes, then knowledge sharing capability and organisational culture should be related to knowledge sharing success. If the aim of these HRM practice characteristics is to improve the HRM practices in facilitating employees' knowledge sharing

success, then it is essential that research is conducted to evaluate their influence, rather than relying on what the literature may imply. The aim of this investigation is therefore to examine the influence of these HRM practice characteristics on knowledge sharing outcomes.

As reviewed in Chapter 2, knowledge sharing capability describes individuals' capability to organise knowledge resources by combining and recombining their existing (internal) knowledge with new knowledge. A set of shared values that guide employees to explicitly act and communicate within the interaction context explains organisational culture. Knowledge sharing success refers to employees' perceptions of knowledge internalisation in terms of their commitment to, ownership of, and satisfaction with shared knowledge.

The key variables in this research are employees and their experiences with knowledge sharing as well as their beliefs about the necessary conditions for facilitating it. It is important to ask about the effect organisational culture has on employees' feelings towards their capability to share, as well as its effect on the success of knowledge sharing. Therefore both employee perceptions of their own capability to share and their beliefs about their organisation's culture of sharing may have a significant effect on their behaviours, and subsequently on the positive knowledge sharing outcomes.

The relationships between the perceptions of employees and their capability to share, their beliefs about organisation's sharing culture, and the successes of knowledge sharing are the key factors in the evaluation of the knowledge-driven HRM practices. These relationships are important in determining the contribution of human attributes and organisational culture in the design of HRM practices for knowledge sharing. If these relationships are unknown, then the appropriateness of HRM practices is questionable. If HRM managers are to highlight the importance of HRM's role for organisational knowledge management initiatives, they must be able to demonstrate that the function of knowledge-driven practices has a positive contribution to

make. As appropriate HRM practices can be an important medium that translate knowledge sharing capability into successful outcomes, it is therefore important to show which practices are contributing to the knowledge sharing improvements that organisations want.

The suggestion here is that the way knowledge-driven HRM practices are implemented will influence the success of knowledge sharing among employees. If the ways they are designed in organisations do not reinforce a culture of sharing and supporting the development of employees' capabilities, then organisational knowledge sharing efforts may detrimentally affected. So organisations that believe successful knowledge sharing is facilitated through HRM practices may not benefit from practices that neglect the factors of employees' capability and their beliefs about necessary conditions for knowledge sharing. The success of knowledge sharing may be affected by a mismatch between the employees' capability and the organisational culture that is reinforced among its employees.

3.2 THE BASIC RESEARCH MODEL

The development of an appropriate research model is necessary for evaluating the employee knowledge sharing success in MSC-status IT organisations. Research models can be represented by a diagram/system that illustrates the abstractions of theories for investigation and gives the research some direction in predicting the possible outcomes of the theories tested. Additionally, as well as limiting the scope of the research, it identifies the key variables for the research and shows the relationships that will be tested through statistical procedures.

As suggested by Minbaeva (2008), KM research in relation to human resource management is still considered at the infant stage and consequently lacks empirical depth. Therefore, research that explores relationships between variables and describes them is appropriate. While this research is

attempting to confirm the relationships so HRM practices can become more robust facilitation tools for knowledge sharing success, it is also intended to identify the knowledge sharing culture that an organisation should reinforce among its employees to support knowledge sharing success.

A basic research framework that shows the main constructs examined in this research is depicted in Figure 3.1.

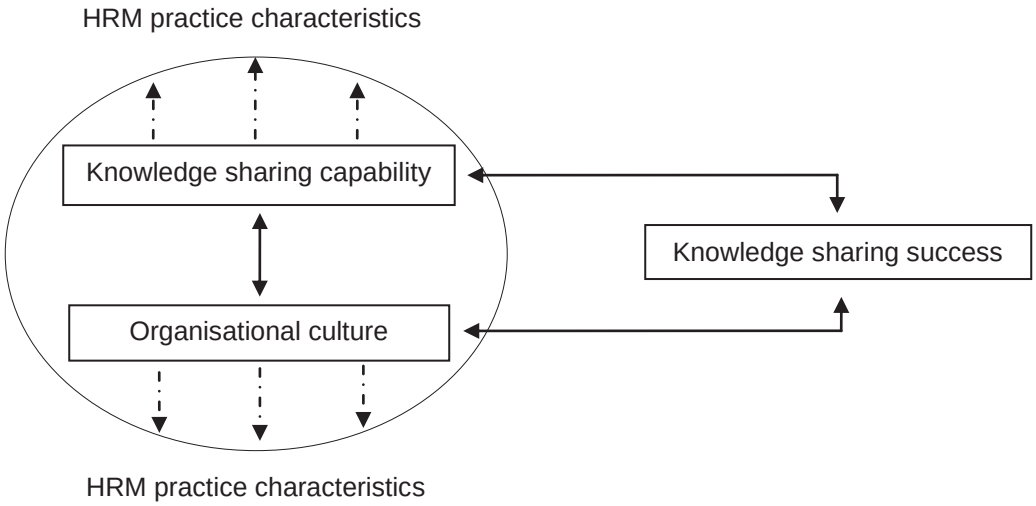


Figure 3.1. Basic research framework

Constructs are concepts or variables that the researcher uses to define the conceptual terms, however cannot be directly observed and therefore are known as latent variables (Hair et al., 2010). Thus, to see the relationships between constructs, variables that can be directly observed, are chosen as indicators or manifest variables and measure the effect of the latent variables (Hair et al., 2010). The manifest variables must be associated with the latent variables and be able to be accurately measured. This provides construct validity. They are usually been selected on the basis of what has been successfully used in previous studies through their proved validity and reliability.

Though a number of scales have been developed to measure the construct of organisational culture, they are mainly based on cultural manifestation

dimensions. This is not appropriate for the present research context that explores employees' perceptions/beliefs about their organisational culture in relation to knowledge sharing. Thus, the measurement of organisational culture is more difficult, as no "readymade" scale is available for use. In deciding what manifest variables should be used and developed in the measurement of organisational culture, some clues to address this problem can be found in several studies that have attempted to model organisational knowledge sharing culture (Al-Alawi et al., 2007; Alavi et al., 2005; Nayir & Uzuncarsili, 2008). The organisational cultural values that have been perceived to be important for knowledge sharing behaviour were discussed fully in Chapter 2 (see section 2.10.1). It was decided that the most appropriate for this study are measures of collaboration, innovativeness, formalisation, autonomy, expertise and trust.

Similarly, the measurement of knowledge sharing capability is difficult too. This is because the construct has been operationalised in a variety of ways by several researchers and therefore different proxies of measures have been developed (e.g. Andrawina et al., 2009; Kim & Lee, 2005; Minbaeva et al., 2010; Reus, 2004; Kelloway & Barling, 2000). Some important clues to the solution of this problem can be found from the definition of knowledge sharing adopted for this research (Hooff & Weenen, 2004) and the research that emphasised the importance of social capital for knowledge sharing (Adler & Kwon, 2002; Nahapiet & Ghoshal, 1998). As discussed in Chapter 2 (see section 2.7), the important variables involved in knowledge sharing capability are measures of ability, motivation and opportunity to share. These measures are each conceptualised using the social capital dimensions. The dimension of shared language and codes is used to conceptualise ability, obligations and expectations conceptualise the measure of motivation to share, and opportunity to share is conceptualised using the dimension of network of ties.

A number of approaches have been highlighted in conceptualising the construct of knowledge sharing success that lead to the development of its measurement. This has been discussed fully in Chapter 2 and it was decided

that the most appropriate is measure of knowledge internalisation. The full research model showing the constructs used in this research is traced through the next section.

3.3 CONCEPTUAL FRAMEWORK FOR THE RESEARCH

This section introduces the integrated conceptual framework developed for this research, identifying the key variables and their relationships. The integrated conceptual framework presents the relationship between employees' perceived level of knowledge sharing capability, their perceptions of organisational culture, and the relationship of these with employees' perceptions of knowledge sharing success.

As discussed in Chapter 2, the framework incorporates an adaptation of the social capital approach (Adler & Kwon, 2002) to knowledge sharing capability, Schien's (1985) three-level model of organisational culture (basic assumptions, values, and artifacts) and Alavi et al.'s (2005) cultural values for organisational culture. Values are considered to play a dominant role and so the values outlined by Alavi et al. (2005) plus trust have been selected as the important values of organisational culture proposed in this model. These relationships are presented in Figure 3.2.

.

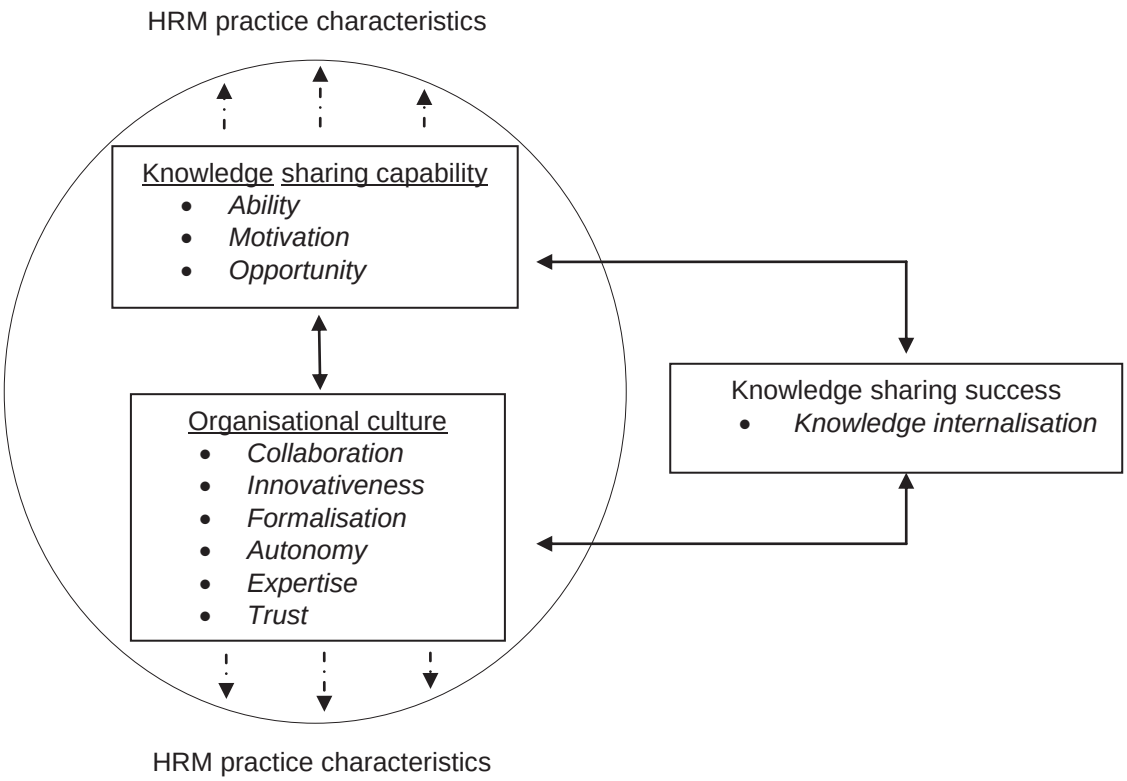


Figure 3.2. Knowledge sharing capability, organisational culture and knowledge sharing success

In this model the line between each of the latent variables (i.e. knowledge sharing capability, organisational culture and knowledge sharing success) suggests an interest in identifying whether or not there is a relationship between them. The research model does not include some variables that may influence the success of knowledge sharing. Such variables would include the knowledge context, transfer mechanisms, organisational characteristics, the relationships between sender and recipient, and even geographic location (physical distance).

A study by Cummings and Teng (2003) supports their effects. Their research that focuses on high technology companies over 15 industries in the United States suggests that knowledge sharing success is significantly associated with knowledge articulability and embeddedness, transfer mechanisms and the degree of similarity between sender and recipient with respect to norms and knowledge distance. While Cummings and Teng's (2003) findings point

to these variables' importance for knowledge sharing success, the focus of the present research, however, is to examine the contribution of HRM-related factors (i.e. knowledge sharing capability and organisational culture) to the success of knowledge sharing, and to attempt to confirm their roles for knowledge-driven HRM practices, and these are therefore the building blocks of the model.

The model suggests that an employees' capability to share knowledge is a function of ability, motivation and opportunity. Organisational culture is considered to be an intangible resource that differentiates organisations and binds members together (Hall, 1992). It comprises the extent to which an organisation nourishes the values of collaboration, innovativeness, formalisation, autonomy, expertise and trust needed for successful knowledge sharing (Alavi et al., 2005; Lee & Choi, 2003; Nayir & Uzuncarsili, 2008). Understanding the relationships between these cultural values and HR capability to share knowledge could assist management to establish unique practices and policies that create competitive advantage. Within the RBV context, these socially complex and causally ambiguous capabilities of employees, supported by culturally embedded practices, make an organisation more difficult to imitate by competitors.

The literature provides evidence that employees' capability (incorporates ability, motivation and opportunity to share) is an important predictor for knowledge sharing (Minbaeva et al., 2010; Siemsen et al., 2008). This model therefore, suggests that perceived level of knowledge sharing capability will have a relationship with perceptions of knowledge sharing success. To test this assumption, the first research question to be addressed is:

1. Is there any relationship between perceived levels of knowledge sharing capability and perceptions of knowledge sharing success?

Scholars suggest that organisational culture has greatest potential to influence both employees' behaviour and managers' attitudes toward knowledge sharing (Kelloway & Barling, 2000; Wang & Noe, 2010). This model therefore, suggests that employees' capabilities to share knowledge

will to some extent be influenced by their working environment or the culture of their organisations. The model also postulates that perceptions of organisational culture will have relationships with perceptions of knowledge sharing success. Based on these assumptions, two research questions were formulated:

2. Is there any relationship between perceived levels of knowledge sharing capability and perceptions of organisational culture?

3. Is there any relationship between perceptions of organisational culture and perceptions of knowledge sharing success?

Finally, the association between organisational culture and knowledge sharing success is further enriched by research question four:

4. What values do the employees perceive to be the most favourable (preferred) for knowledge sharing success?

3.4 RATIONALE FOR CONDUCTING THE RESEARCH

Yang (2008) suggests that the importance and contributions of knowledge management systems have been over-emphasised in the literature. The inability of KMS to effectively transfer tacit knowledge has initiated research on the relationship between HRM and knowledge management processes. Research into HRM in relation to knowledge management has acknowledged ‘people’ as the heart of KM philosophy, thus assuming they are the main contributors in the success of knowledge management initiatives for competitive advantage (Scarbrough, 1999; 2003; Wright et al., 2001; Yahya & Goh, 2002; Yang, 2008). In the search for competitive advantage, strategic HRM scholars suggest that highly skilled and motivated human capital (defined as human capital advantage) supported with better processes (defined as human process advantage) contributes to the difficulty for competitors to imitate these unique and complex social relationships (Boxall, 1996; Wright et al., 1993; Wright et al., 2001).

This research can add to the body of knowledge in five ways. Firstly, this research will be added to the few studies into HRM and knowledge management that examines concepts proposed in the conceptual model from the perception of an employee. The importance of employees' perceptions is highlighted in this research because perceptions build individuals' behaviours, which in turn have a considerate effect on organisation success in achieving its objectives (Robbins et al., 2011). Schermerhorn, Hunt, and Osborn (2008, p. 81) further suggest that:

> "Through perception, people process information inputs into responses involving feelings and action. Perception is a way of forming impressions about oneself, other people, and daily life experiences. It also serves as a screen or filter through which information passes before it has an effect on people. The quality or accuracy of a person's perceptions, therefore, has a major impact on his or her responses to a given situation".

Thus, perceptions on what reality govern employees' behaviours as Robbins et al. (2011, p. 144) suggest that "the world as it is perceived is the world that is behaviourally important". This implies that an individual's response in describing knowledge sharing success or organisational culture may not be identical with others even though they are in the same organisation. Employees' perceptions that represent the general view of employees can, therefore, be considered as an effective measurement tool to demonstrate successful knowledge sharing within organisations. It is hoped that this research may provide a workplace understanding of the associations among the proposed concepts in supporting HRM and organisational KM strategies.

Secondly, a significant relationship between employee knowledge sharing capability, organisational culture and knowledge sharing success, empirically supports the importance of human attributes and cultural characteristics. These will then be given closer attention in the design of HRM practices for successful knowledge sharing within organisation.

Thirdly, this research attempts to bring human resources into the KM equation. Through the human attributes that have been translated into the capacity of human resources to organise their knowledge (i.e. employees have ability and motivation, and are provided with opportunity to share knowledge) for successful knowledge sharing, this research will bridge the missing link between HRM and KM. A significant relationship between HR capability to share and knowledge sharing success indicates the importance of HRM for KM initiatives, and acknowledges their equal status with KMS. It may also empirically confirm the claim made by HRM scholars on the greatest potential of that the "factor" with the greatest potential to increase knowledge sharing success is the people.

Fourthly, identifying the cultural values that employees believe favour knowledge sharing may assist the management of knowledge-based organisations in dealing with 'expertise' sharing among knowledge workers. Organisations interested in gaining a pay-off from their investment in KM initiatives must nourish the cultural values that employees find favourable. Consequently, the research empirically adds to the body of literature by confirming the claim that knowledge sharing is supported in "the right" cultural environment. Specifically, this research identifies organisation specific cultural values for successful knowledge sharing within KIFs.

Fifthly, understanding the relationships between organisational culture and HR's capability to share knowledge may enhance the understanding of how HRM practices can be used in the best possible ways to support knowledge sharing success within organisations. The conservative thinking of simply applying practices and policies that emerge from either western or eastern contexts as well as those popularly suggested by the literature, may not be appropriate within any one specific context. These findings can help organisations in identifying a knowledge sharing success gap by suggesting underlying cultural values that should be incorporated in the establishment of HRM practices. Any significant relationships found in this research will be useful for either management or HR managers or both to further evaluate their practices so that the implementation of practices do not only maintain

their original facilitation purposes, but also increase the breadth of internal knowledge sharing and produce a competitive advantage. Bridging HRM with a resource-based perspective through the creation of unique and specific organisational attributes for successful knowledge sharing makes an organisation superior to others. This organisational specific approach fits with Lado and Wilson's (1994) contention that HRM has a pivotal role in helping the organisations remain competitive, through the development of organisational specific competencies, and fabrication of social relationships within the organisation that eventually form its culture and history, creating tacit knowledge that helps the organisation become superior to others.

This framework will be tested on knowledge workers, defined as employees "critical for creating new knowledge or developing innovations within organisations" (Collins & Smith, 2006; p. 549) of Malaysian knowledge-based organisations located in the Federal Territory and Klang Valley. The findings from this study may apply to other contexts of other knowledge-based organisations as this research hopes to initiate ways of helping management to carefully design their HRM practices and policies for organisational competitive advantage.

3.5 OPERATIONALISING THE CONCEPTUAL MODEL

Both qualitative and quantitative techniques as well as a triangulation methodology can be used and have been suggested when conceptualising a research model. Such techniques would include in-depth interviews, surveys, focus groups, case studies and even a combination of survey and interview. A distinction needs to be made between qualitative and quantitative research. Qualitative research consists of the non-numerical data analysis that requires a longer process but is rich in meaning and details (Babbie, 2002). However, the author suggests that this richness of meaning is a source of ambiguity because the non-numerical data are the subject of individuals' personal experiences and expressions, and therefore can generate different interpretations. Quantitative research, on the other hand,

consists of numerical data analysis that makes the observations more explicit (Babbie, 2002). In other words, the presence of numbers makes interpretation, comparison and summarisation of data easier. This means it is also possible to use different statistical analyses to assess the significance of the data (Babbie, 2002). Because each research methodology has its particular strengths and weaknesses, researchers always have a dilemma in choosing the right method to be employed. Babbie (2002) suggests that both are important and acceptable to be used in social science research. Consequently, a combination of several research methods, or known as triangulation, to measure the research model has been suggested. While triangulation techniques may strengthen findings by offering rich interpretation, some constraints on obtaining the data may weaken this possibility.

The key problem to conducting this research is getting access to a sample. Physical distance and time constraints limited the researcher's opportunity to use either qualitative or triangulation research methods. This research is conducted in Malaysia and the researcher is located in New Zealand while conducting this research. The researcher is only granted a maximum of three months stay in Malaysia for data collection. Perhaps the most important limitation was the sample of interest for this research (i.e. knowledge workers), and the mobile nature of their jobs, that many have no permanent work station further restricts their accessibility. In fact, during the preliminary data collection, the researcher asked the HR managers of the participating organisations about the possibility of conducting an interview with their knowledge workers. The immediate response was that their personnel are always on the "road", committed to complete jobs on time and the HR managers had no idea when these employees would be in the office. This was confirmed when the actual collection of data took place from early March until end of April 2009 and still in that time nine (9) questionnaires did not reach the respondents, and subsequently were returned completely blank. Although they are required to be in the office to present their work progress, the HR managers were reluctant to allow the researcher to conduct

interviews with their personnel. The reason given was that it would be time consuming and they were worried about interrupting the productive hours of those personnel.

Some clues that offer direction for this research come from Ruppel and Harrington's (2001) research. They suggest that much research in the area of culture and KM has been qualitative and that quantitative studies to confirm or deny these reports would be timely. It was decided that the most appropriate way to operationalise the research model and collect data was through a survey questionnaire. The rationale for adopting this technique is to obtain as many employees' perceptions on each organisation as possible.

Having determined appropriate measure for each of the variables and the method for operationalising the model, the research methodology including the questionnaire design, sampling, data collection and analytical procedures are outlined in the next chapter.

CHAPTER 4: RESEARCH METHODOLOGY

4.1 INTRODUCTION

This section outlines the methodology employed in the study. This is descriptive research conducted using the literature review and perceptual measures to capture data on organisational culture, knowledge sharing capability and knowledge sharing success. As discussed in chapter 3 (refer section 3.5, p. 90), a survey was developed in order to access significant numbers of respondents at each organisation. According to Babbie (2002) surveys, particularly self-administered, are less expensive and very cost effective compared to face-to-face or telephone interviews. Well-designed studies and questionnaires can increase response rates. Surveys are useful in describing the characteristics of a large population and may reduce bias as respondents' opinions are not influenced by the researchers. Furthermore, the collected data can easily be analysed using computer statistical software packages. The standardisation of questions makes measurement more specific through the use of uniform definitions with all participants and ensures similar data are collected (Babbie, 2002). Surveys with structured response styles (i.e. Yes/No, Likert scales) eliminate much of respondents' flexibility in expressing their ideas as well as problems of misinterpretations.

However, by providing space for respondents' comments and piloting the questionnaires with a small sample, researchers can gain useful information that could have been otherwise been omitted. Surveys can be developed in either paper-based or online formats. While the online format can reduce information processing mistakes and also save the researchers' time, respondents' anxieties about giving information through emailed hyperlinks due to fear of abuse or spam email, lowers the rate of return (Wright, 2005). Aitken, Power and Dwyer's (2008) research also suggests that online surveys are not an effective way to obtain a high rate of response from the

respondents. Based on these considerations, a paper-based (hard copy) survey was constructed and used to obtain as many perspectives on the operationalised factors at each organisation as possible.

The chapter commences with a presentation of the measures of constructs used in this study. The discussion continues with a description of the questionnaire and its design, the sample chosen and the procedures undertaken for data collection. It then moves to consider how data screening was conducted, how the checking of multivariate assumptions was undertaken and how construct validity and scale reliability were examined. The final part of this section describes the statistical techniques used for addressing the research questions.

4.2 MEASURES OF CONSTRUCTS

4.2.1 The Measurement of Organisational Culture

Since there are no readily available manifest measures of organisational culture, it is reasonable to construct measures by combining the extant measures that have already been validated and used for other studies on knowledge management, knowledge sharing, organisational design, or organisational culture. As fully discussed in Chapter 2, six organisational cultural values were selected to be examined in this research. All cultural values except expertise were measured using existing and tested scales. Collaboration and formalisation were operationalised using a measure developed by Lee and Choi (2003). Bock's et al.'s (2005) innovativeness scale was used to measure innovative. Autonomy was operationalised using an instrument developed by Hackman and Oldham (1976). Trust was operationalised using a combination set of measures developed by Cook and Wall (1980), and Staples and Webster (2008). Since there are no extant measures of expertise were available to the researchers' best knowledge while conducting this research, the instrument for measuring expertise was developed based on the interpretation and findings of Alavi et al. (2005).

These scales are included as Part B in the questionnaire developed for this research.

4.2.2 The Measurement of Knowledge Sharing Capability (KSC)

Three human attributes scales were used to measure the variable knowledge sharing capability. Knowledge sharing capability comprises three manifest variables: ability, motivation and opportunity to share. These variables were each measured by three items of the Knowledge Distance Scale (Cummings & Teng, 2003); the Intention to Remain scale (Jehn, 1995) and the Opportunity to Share scale (Siemsen et al., 2008) respectively. However, some changes have been made on the original version of items measuring opportunity to share for the requirement of the present research. While Siemsen at al. (2008) define time availability as a proxy for employee's opportunity to share in their research; the present research defines human resource management (HRM) practices of training and job rotation as a proxy for explaining employees' use of interaction opportunities provided by the organisation to improve weaker ties amongst organisational members, subsequently broadening the breadth of knowledge sharing. These scales are included as Part C in the questionnaire developed for this research.

4.2.3 The Measurement of Knowledge Sharing Success (KSS)

The review of the literature on previous knowledge sharing studies identified one study that provided useful information for development of measures of knowledge sharing success. This was a study conducted by Cummings and Teng (2003) into key factors affecting knowledge transfer success in transferring R&D knowledge within international R&D partners across three forms of governance and more than 15 industries. Specifically, participants were asked to rate knowledge sharing success in terms of knowledge internalisation, the extent to which recipients obtain ownership of, commitment to, and satisfaction with the transferred knowledge. For this study, knowledge sharing success was defined in the same way and was

measured using an 18 item scale developed by Cummings and Teng (2003). These scales are included as Part D in the questionnaire developed for this research.

4.3 QUESTIONNAIRE DESIGN

The variables depicted in the conceptual framework were measured using multiple items in the questionnaire. For this reason, the literature was searched to find scales that had been validated and found to be reliable in previous related research on knowledge management and organisational culture for the 10 constructs (for example, Bock et al., 2005, Cummings & Teng, 2003; Lee & Choi, 2003; Siemsen et al., 2008). The survey instrument was developed in dual-languages, English and Bahasa Malaysia (Malay Language), and both versions of the survey instrument are included in Appendix A for reporting purposes. The questionnaire is made up of 51 Likert items designed to measure the constructs under study. The questionnaire design followed a framework of seven steps which is described below.

4.3.1 The Framework of Questionnaire Design

Several recommendations made by researchers were used in developing the framework of the questionnaire design. In this research, a combination of Cavana, Delahaye and Sekaran's (2001), Spector's (1992) and Churchill's (1979) frameworks were adopted. The framework developed by Cavana et al. (2001) is concerned with the wording and the general appearance of questionnaires, and its principles were considered important for this study. Spector's (1992) framework was considered appropriate for this research because it was developed with a summated rating scale. While Churchill's (1979) framework was specifically designed for marketing research, it has also been applied to other disciplines. Darroch's (2003) research on developing a measure of knowledge management behaviours and practices was based on this framework as was Parnell and Bell's (1994) participative decision making scale development. Churchill's (1979) framework was

therefore applied in this research. The three frameworks were modified to meet the needs of this research scope as shown in Figure 4.1 and detailed below.

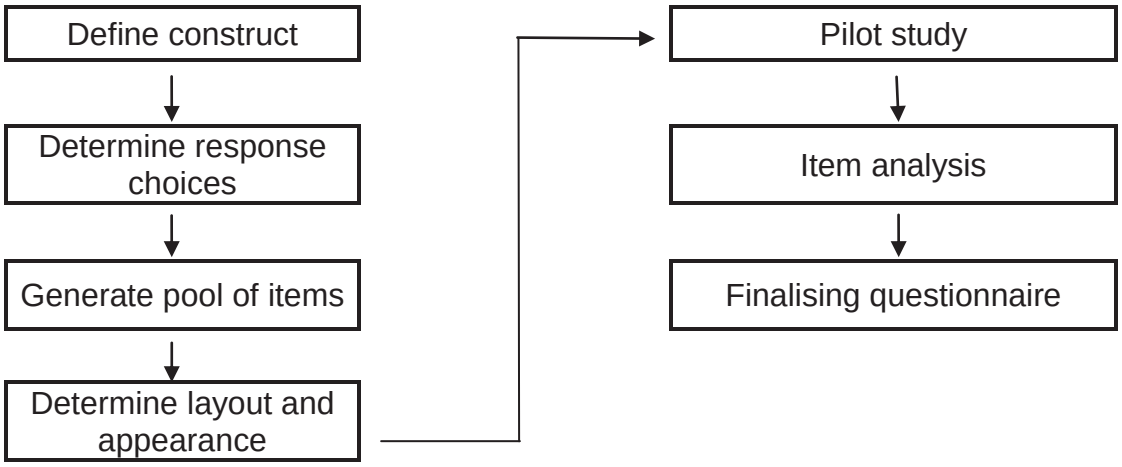


Figure 4.1. The framework for developing the questionnaire

4.3.1.1 Define Constructs

In defining the constructs of interest, the researchers must be exact in delineating what is included in the definition and what is excluded to ensure that what is to be measured is clearly determined (Churchill, 1979). For example, one of the organisational culture value constructs identified based on the previous research is collaboration (Alavi et al., 2005; Lee & Choi, 2003). Therefore, the definition provided by Alavi et al. (2005) and Lee and Choi (2003) was then used to measure collaboration. Similarly, all other constructs under study were given a definition, based on the previous studies from which they were drawn.

In this research, six organisational cultural value constructs were defined, based on previous research acknowledging the important role of culture in knowledge management in general and knowledge sharing or transfer specifically. Organisational culture refers to the perceived desirable values that guide organisational members to act appropriately and share knowledge within the interaction context (De Long & Fahey, 2000; Keyton, 2005; Nadler & Tushman, as cited in Alavi et al., 2005). It is postulated that the

organisational culture values of collaboration, innovativeness, expertise, autonomy, formalisation and trust might exhibit desirable values for knowledge sharing that consequently contribute to successful knowledge sharing within an organisation.

Collaboration refers to the degree of cooperation, support and help among employees in the organisation (Alavi et al., 2005; Lee & Choi, 2003). Innovativeness, explains the degree of tolerance to failure by allowing the free flow of information for organisational improvement (Alavi et al., 2005; Bock et al., 2005). Expertise is described as the employees' know-how and skills that symbolised status and recognition as an expert for facilitation of information flow within an organisation (Alavi et al., 2005). Autonomy is defined as the extent to which employees' exploit their self-direction in scheduling work and determining the procedures to be used in assuming the tasks (Alavi et al., 2005; Hackman & Oldham, 1975). Formalisation is defined as the degree of formal rules, procedures and standard policies in the organisation (Alavi et al., 2005; Lee & Choi, 2003). Finally, trust or "faith in the trustworthy intentions of others and confidence in the ability of others" was defined based on Cook and Wall's (1980, p. 40) research on new work attitude measures of trust, organisational commitment and personal need non-fulfilment.

Three constructs were used to measure knowledge sharing capability. Knowledge sharing capability is defined as the extent to which employees are provided with the ability, motivation and opportunity to share knowledge, as perceived by organisational members. The ability to share knowledge is defined as the extent to which both transfer parties (sender and receiver) have similarity in knowledge bases (Adler & Kwon, 2002; Cummings & Teng, 2003; Nahapiet & Ghoshal, 1998). Employees' motivation to share knowledge is defined as the degree to which employees will remain with the organisation (Alvesson, 2004; Reus, 2004, Siemsen et al., 2008). Opportunity to share, as defined in research conducted by Currie and Kerrin (2003), Yahya and Goh (2002) and Siemsen et al.'s (2008), explain the extent to which employees are sufficiently provided with training and job

rotation during their professional life, which allows them to freely interact with each other at work.

Finally one construct measuring knowledge sharing success was defined based on the research conducted by Cummings and Teng (2003), which identified factors contributing to the success of transferring R&D knowledge in 15 industries of three different modes of governance. Knowledge sharing success, described in terms of knowledge internalisation, explains the extent to which recipients obtain ownership of, commitment to, and satisfaction with the shared knowledge.

4.3.1.2 Determining Response Choices

The next stage in the process of questionnaire design was to determine the nature of responses available to respondents. According to Spector (1992), the three most common response choices are agreement, evaluation and frequency. Agreement response choices ask respondents to indicate the degree to which they agree with each item, and the choices are typically symmetrical and bipolar around a neutral point. While evaluation responses require respondents to rate each item based on aptness, frequency choices ask for respondents' judgment of how often items have occurred, should occur, or usually occur. Most studies in knowledge sharing using questionnaire as the instrument in data collection, apply various Likert type scales, ranging from five-points to seven-points. The Likert scale indicates the degree to which respondents agree or disagree with each questionnaire item. Although in some studies, a five-point scale (e.g. Shah Alam, Abdullah, Amir Ishak, & Mohd Zain, 2009; Cabrera et al., 2006) and seven-point scale have been used (e.g. Ngah, Chua, & Ibrahim, 2009; Staples & Webster, 2008), there is a body of research suggesting that a six-point scale should be employed. A six-point scale is suggested to avoid artificial mid-scale centering effects and to overcome the problem of too many neutral responses that are common among Asian people when given an option to choose (Amabile et al., 1996; Evers & Day, 1997; Hussein, Abdul Karim, Mohamed, & Ahlan, 2007). In general Lee and Choi (2003) state that survey

respondents are often reluctant to show an extreme view and may modify their opinion in an effort to fit with what they think is desired by or pleasing to the interviewer or to say the “right” thing. Garland (1991) in discussing the same outcomes considers that resorting to a scale without a midpoint seems to help mollify this social desirability bias without changing the direction of opinion. Therefore, this study utilised a six-point scale ranging from “1 = Strongly Disagree” to “6 = Strongly Agree”.

4.3.1.3 Generate Pool of Items

To accomplish this step, several recommendations made by scholars were considered. For example, Cavana et al. (2001) suggest that lengthy items should be avoided, because length usually increases complexity and diminishes clarity. They also suggest that a large number of items represent a form of insurance against poor internal consistency. However, Cook, Hepworth, Wall & War (1981) suggest that a measure should have at least three relatively homogeneous items for content adequacy. Also, the content of each item should primarily reflect the construct of interest and items that convey two or more ideas (double-barrelled items) should be avoided (DeVellis, 2003; Churchill, 1979; Spector, 1992). Nevertheless, negatively worded items should be used to avoid response bias (DeVellis, 2003; Churchill, 1979; Spector, 1992). Double negative worded items, which are a source of ambiguity should be avoided (Baker, 2003). DeVellis (2003) and Spector (1992) suggest that items for all constructs should be simple and specific. Simpler words and sentences with everyday and plain language should be used and the reading level of the respondents should be considered and some validation items should also be included.

Thus, based on the above recommendations, the researcher conducted a literature search during the item generation stage as suggested by Churchill (1979), which was also employed by other researchers when investigating knowledge sharing or transfer (for example Bock et al. 2005; Cabrera et al., 2006; Lee & Choi, 2003; Staples & Webster, 2008). Churchill (1979) suggests that the literature should indicate how each variable has been

defined previously and how many dimensions or components it has. Therefore, extant scales developed in prior research were used to construct the survey instrument. Moreover, this offered the opportunity to test whether the scales, which are largely used in Western contexts, hold true in an Asian context. Research constructs were operationalised on the basis of related studies. The operational definitions of instruments, and their related literature, have been presented in the review of literature (see Chapter 2). Most of the research items have already been validated and used for other studies on knowledge management processes (for example: Bock et al., 2005; Cabrera et al., 2005; Cummings & Teng, 2003; Lee & Choi, 2003). The items in the current study were constructed to enable the examination of employees' perceptions of organisational culture, perceived level of knowledge sharing capability, and perceptions of knowledge sharing success.

4.3.1.4 Determine Layout and Appearance

Determining the layout and appearance for the questionnaire is the next stage of questionnaire design. Cavana et al. (2001) suggest that the layout and the general appearance of the questionnaire is important to ensure that the questionnaire looks attractive. For this reason, Cavana et al's (2001) recommendation to include an appropriate introduction and instructions about the research was adopted. The introduction covering page contained information about the research: researcher's name, research title, objective of the research, the statements about the confidentiality and anonymity of the information provided and an invitation to respondents to voluntarily participate. Other information such as the respondents' eligibility to participate in the research, the time needed to complete the questionnaire, the definitions of concepts (i.e. knowledge, knowledge sharing, knowledge sharing capability and knowledge sharing success) and contact information were also stated (see Appendix B). Other criteria such as the design of the cover page including the colour scheme, the line spacing and selection of font size were also applied so that the questionnaire appeared neat and attractive and would enhance questionnaire completion by the respondents.

As a way of helping the respondents to easily answer the questions, the importance of logically organising the questions in appropriate sections is also suggested for this stage (Cavana et al., 2001). In order to guide this step, Cavana et al.'s recommendation on the sequencing of questions was taken into consideration. Cavana et al. (2001) suggest using a funnel approach. This means, the order of items within each section of the questionnaire should be determined by moving from the general to the specific and from items that are relatively easy to answer to those that are progressively more difficult. Measurement items should be placed randomly, and both negatively and positively worded items should be placed in different parts of questionnaire to reduce any systematic biases in the responses (Cavana et al., 2001). In this research there are eleven (11) negatively-worded measurement items and they are randomly placed within each section of the questionnaire. Table 4.1 summarises the place of each negatively-worded item based on the item number in the questionnaire. Table 4.2 shows which items of the scales related to which cultural and knowledge sharing factors and their random placement.

Table 4.1

Summary of negative-worded items

Scales	**Item numbers**
Organisational culture	
• *Collaboration*	NIL
• *Innovativeness*	NIL
• *Formalisation*	13, 26 & 28
• *Expertise*	NIL
• *Autonomy*	30
• *Trust*	15, 22 & 33
Knowledge sharing capability	
• *Ability*	36
• *Motivation*	38 & 40
• *Opportunity*	NIL
Knowledge sharing success	57

Table 4.2

Summary of items in the questionnaire

Scales	Item numbers
Organisational culture	
• *Collaboration*	10, 11, 14, 17 & 21
• *Innovativeness*	16, 20 & 27
• *Formalisation*	12, 13, 24, 26 & 28
• *Expertise*	19, 23 & 32
• *Autonomy*	25, 30 & 31
• *Trust*	15, 18, 22, 29 & 33
Knowledge sharing capability	
• *Ability*	35, 36 & 41
• *Motivation*	38, 40 & 42
• *Opportunity*	34, 37 & 39
Knowledge sharing success	44 – 60

4.3.1.5 Pilot study

Prior to pilot testing, the questionnaire was examined for content or face validity. For this purpose, the questionnaire was checked by both research supervisors and two academics in the area: a senior lecturer, specialising in knowledge management from Universiti Tenaga Nasional, Malaysia (UNITEN) and a senior lecturer specialising in HRM from MARA University of Technology, Malaysia (UiTM). The draft questionnaire was assessed for its format, ease of understanding and relevance of questions. No concerns were expressed about the phrasing of items or their relevance. The comments by the two experts and the actions made are shown in Table 4.3.

.

Table 4.3

Experts' comments and actions taken

Experts	Comments	Actions taken
1 and 2	The length of the questionnaire (51 items) as the population of interest for this research was knowledge workers.	The length was not changed prior to the pilot study and feedback from pilot's respondents.
1	To insert respondents' number of month(s) or year(s) working in the present department	This item was included in the section A of demographic information.

Churchill (1979) suggests that an adequate pre-test of the instrument should be done before data collection commences. For this reason, the questionnaire was pilot tested with 20 knowledge workers (HR & Administration and IT Department) in a selected public university in Malaysia. As suggested by Spector (1992), two main factors were examined in the pilot test: respondent identification of ambiguous and confusing items; and items which could not be rated using the dimension chosen. Other than that, the researcher also tried to gain insight about the expected response rate; to become familiar with administering the survey, and to examine the time taken by the respondents to complete the questionnaire.

The respondents were informed that the survey was voluntary and that anyone who wished to leave could do so. All agreed to participate. The questionnaire was administered at the conclusion of each department's (HR & Administration and IT) weekly meeting and collected immediately upon completion. At the beginning of the pilot test, the respondents were concerned about the length of the questionnaire (51 items). They were gently encouraged to begin and it was explained that all items were in simple and short sentences and would not require a long time to complete. The researcher also allowed respondents to ask any questions for clarification if they found necessary. While the length of the overall questionnaire was a matter of concern, the respondents said that all items in the questionnaire

were understandable. All of the respondents took between 20 to 30 minutes to complete the questionnaire. The internal consistency of the items for each construct was then checked by utilising the data obtained from this pilot testing.

4.3.1.6 Item analysis

The purpose of an item analysis was to find those items that formed an internally consistent scale and to eliminate those items that did not (Spector, 1992). In order to guide this step, several recommendations suggested by experts were adopted. According to Nunnally (1978), the reliability coefficient alpha for a new scale should be at least 0.70 or it may decrease to 0.60 in exploratory research (Hair, Black, Babin, & Anderson, 2010). Hair et al. (2010) further suggest that both item-to-total correlations and inter-item correlations exceed 0.50 and 0.30 respectively. Additionally, DeVellis (2003) suggests that a scale item that has relatively high variance is preferred and item means close to the centre of the range of possible scores is desirable.

Based on the results from the pilot study, no items had to be dropped due to an acceptable reliability. Although the Cronbach's Alpha reliability was based on a small sample of respondents (n=20), it indicates that the scales were consistent in measuring the intended constructs. Consequently all 51 items were used in the final questionnaire for data collection. Based on the feedback received from the respondents in this pilot study concerning their understandability, the wordings of all items were maintained.

4.3.1.7 Finalising the Questionnaire

In finalising the questionnaire, Step 4 (determine layout and appearance) as described earlier, was repeated.

4.4 THE QUESTIONNAIRE

All scales developed for this research are included in the questionnaire designed for this research entitled the Knowledge Sharing Success Survey. A copy of this questionnaire is enclosed in Appendix A. The questionnaire is divided under four headings: Section A (Demographic information); Section B (Organisational Culture); Section C (Knowledge Sharing Capability); and Section D (Knowledge Sharing Success).

The first part (Section A) asks for some respondent demographic information includes the variables of gender, age, highest academic qualification, position in the organisation, department attached, ethnic group, language preferences to answer the questionnaire and the length of time with the attached department as well as the present employer. The items used primarily multichotomous closed-ended questions; allowing participants to select from specified options or ranges in regard to gender, age, highest academic qualification, number of years working in the organisation and so on. Open-ended questions were used to obtain specific information on respondents' years of employment with their current department and current role. This information provided a general overview of the makeup of the sample.

The second part of the questionnaire (Section B) contains the twenty four items of the Organisational Culture Scale. Section C contains the nine items of the Knowledge Sharing Capability Scale and eighteen items of the Knowledge Sharing Success Scale are placed in the Section D. For each item respondents are asked to indicate whether they strongly disagree, disagree, slightly disagree, slightly agree, agree, or strongly agree with the statement given. The final part of the questionnaire contains an open-ended question to allow the respondents to write any comments about the research or to express any additional views they wished to share. Their comments or suggestion may provide additional information that useful in the result interpretation. The items in the current research are constructed to enable examination of employees' perceptions of organisational culture, perceived

level of knowledge sharing capability, and perceptions of knowledge sharing success.

4.5 SAMPLE AND DATA COLLECTION

The population of interest for this research is employees identified as "knowledge workers" of the Malaysian-owned Information Technology (IT) companies. These IT companies are characterised as software developers and are the IT solutions providers to the government agencies. All were located in the Federal Territory and the Klang Valley of Malaysia; both areas are two of the most developed in Malaysia and have many large companies. For this research, IT companies with over 100 employees of multiracial composition and Multimedia Super Corridor (MSC) status were selected. Companies with over 100 employees are most likely to have formally established HRM systems (Collins & Smith, 2006; Huselid, 1995). The list of entitled companies was obtained from the MSC (www.msc.com.my) and PIKOM (www.pikom.org.my) databases. 1141 software developers companies were listed in MSC, but of these only 20 had complete data in the PIKOM database and so fulfilled the criteria set for this research. A letter of invitation to participate in the research was then sent via email to the HRM Manager introducing the researcher, outlining the research project and requesting their participation. Along with it, the companies were also informed of the benefits to be gained due to their participation.

When this research was proposed, the researcher was located in New Zealand and, due to the very low/unfavourable response from the selected companies; accessibility to the sample became a vital concern. Consequently the researcher travelled to Malaysia and arranged several meetings with the HR managers at each of 20 selected companies. The aim of the visit was to establish contact and rapport with the management team of these IT companies. The researcher had an opportunity to further explain about the research, the ethical considerations, and the benefits to be gained from their participation, as well as the procedural aspects of the data collection process.

In these meetings, the researcher also discussed with them the best way to administer the questionnaire without disrupting the employees' productive working hours. As a result of these meetings, seven companies agreed to participate and a process for meeting the employees and the distribution and collection of questionnaires was negotiated. This comprised the following steps:

- The HRM Department would be responsible to identify the qualified respondents for this research (i.e. knowledge workers who are involved in creating new knowledge or developing innovations for the organisation);

- Based on the list of identified "knowledge workers" provided by the HRM Department, the researcher was responsible for sampling for this research;

- The researcher would be responsible for preparation of the questionnaire for each of the companies. The questionnaire was then to be given to the assigned HRM staff (organisational representative) to be distributed to the respondents;

- The researcher was also to ensure that each questionnaire set (including pre-paid postal envelope) would be put into an envelope. Sets were distributed to the randomly selected group with the support of one person (i.e. organisational representative) at each organisation. Each envelope contained the questionnaire and an envelope for returning the questionnaire. The envelopes were marked with the organisational code so that the researcher would know when they were returned by post, which organisation, but not which person, they were from. This maintained confidentiality and privacy for participants.

- Employees could complete the questionnaire at their offices or in the community that they are comfortable in at a time that suits them;

- Employees were also allowed to take back home the questionnaire if they did not have the time to complete it during working hours;

- Employees were then asked to mail back the questionnaire within two weeks to the researcher using the pre-paid envelope. Alternatively, they may also return the completed questionnaire at the drop box provided in the HRM department. The researcher would be responsible for contacting the HRM Department to get information on the returned questionnaires in the drop box. If there were more than five returned questionnaires, the researcher was responsible for collection of returned questionnaires the next day;

- The HRM department was responsible for circulating notices to their employees reminding them of the due date for returning the questionnaires as well as the researcher's upcoming visit to the organisation;

- If the number of questionnaires returned by stipulated time was low, the researcher agreed to prolong (extend) the completion period for another 10 days;

- The HRM department and their assigned staff (organisational representative) took no responsibility for any missing questionnaires or incomplete returned questionnaires.

The survey commenced once approval was received from the participating companies, and ethics clearance for data collection was granted by Massey University on 30 September 2008 (see Appendix C). Data was collected from early March 2009 until the end of April 2009. Unfortunately, due to the economic crisis, three companies were no longer suitable for the context of the current study as they were in the midst of restructuring throughout the two month period of data collection. In the end, employees from four companies made up the final sample.

A simple random sampling technique was used in this research. Babbie (2002) suggests that random selection erases the danger of researchers' conscious or unconscious bias as well as offering access to the body of probability theory, which provides the basis for estimating the characteristics of the population and the accuracy of a sample. Additionally, in a simple random sampling each element has an equal chance of selection independent of any other event in the selection process. **"**Employees" were identified by management as knowledge workers, defined as employees "critical for creating new knowledge or developing innovations within the organisations" (Collins & Smith, 2006, p. 549). The respondents in this research were of Malaysian nationality, who had already worked with the company for at least a year, and were involved in creating new knowledge or developing innovations (for example: solving problems, proposing new ideas or any other kind of "newness" created that benefits the community or organisation). It was expected that Malaysian employees working in those participating organisations for more than one year had become familiar with the culture of organisations in the Malaysian context.

The selection of respondents was initiated by contacting the HR manager of each of the participating companies. These managers then identified those staff who matched the sample characterisation outlined for this research. The number of knowledge workers identified by each participating company was in the range of 175 – 285 persons, making a total number of 810 accessible employees as the population**/**sample for this research (please refer to Table 3.3). According to guidelines provided by Krejcie and Morgan (1970), the minimum desirable sample size was n = 260 to obtain a known precision ±5% and confidence level of 95%. The sample size, however, can be increased to slightly more than the recommended size to allow the researcher to execute further analysis in order to answer research objectives using correlation and multiple regression analysis (Chuan, 2006). In previous research on knowledge management activities in Malaysian context where a similar data collection method was used to this study, sample sizes ranged from 50 to 500 with response rates of 42% to 100% (Abdullah, Abu Hassim,

& Chik, 2009; Azudin, Ismail, & Taherali, 2009; Ngah et al., 2009; Shah Alam et al., 2009).

Therefore, from these lists, a final sample of 500 respondents was selected using random number tables. As depicted in Table 4.5, a total of 500 questionnaires were distributed. 286 were returned, representing a 57.2 % response rate. After checking the entire returned questionnaire, only 270 were considered usable, of which 253 were fully complete, while 17 questionnaires were partially complete with some missing data on a few items (i.e. less than 10% missing values). Hair et al. (2010) suggest that if less than 10% of data is missing, this can be ignored, and the participant can be included. However, 16 questionnaires were incomplete and excluded from the analysis. Of these, 9 questionnaires were completely returned blank (completely missing data). Missing data was also detected in another 7 questionnaires, which were deemed to contain substantial amounts of missing values (i.e. more than 90% missing values). Table 4.4 summarises the number of distributed and returned questionnaires from each participating organisation.

Table 4.4

The summary of distributed and returned questionnaires

Firms	Total number of employees given to researcher	Distributed	Returned	Fully complete	Less than 10% missing data (included in the analysis)	Incomplete (excluded from the analysis)		Useable for analysis
						More than 90% missing data	B	
A	209	131	61	51	4	3	3	55
B	245	134	84	75	7	1	1	82
C	181	112	75	68	3	2	2	71
D	175	123	66	59	3	1	3	62
Total	810	500	286	253	17	7	9	270

Note: B - completely blank (completely missing values)

The effective response rate for the questionnaires was 54 %. Despite being slightly lower than the initial 57.2 % return rate, it is still a high rate of return

for questionnaire administration. This can in part be attributed to the effectiveness of the agreed list of responsibilities between the researcher and the HRM department of each participating company. All partially and fully completed questionnaires (270) were included in the initial data manipulation to ensure maximum data was considered in creation of the constructs. Pairwise deletion was used to deal with missing cases, that is, while missing cases were omitted, cases with valid values for other variables were included in the statistical analyses.

4.7 ANALYTICAL STRATEGY

This section describes the analysis strategy undertaken for data screening, checking for outliers, checking the multivariate assumptions, and methods of analysis for addressing the research questions. The findings from each of these analyses are discussed further in the results chapter (Chapter 5).

4.7.1 Data Screening

The data were screened to ensure that no errors in data entry had occurred since errors can distort the statistical analyses. Prior to data entry, all negative-worded items (see Table 4.1 for summary of negative-worded items) were reverse scored so that higher scores indicated higher levels of agreement (Pallant, 2007). Screening was done by the re-tabulation process. This involved randomly taking out 30 questionnaires to be retabulated and matching this with the original. Any corrections were made prior to checking for “out of range” values in the data set.

In screening the data, three minor errors were found that were data input faults. No major errors were found and screening for the 270 data set continued. This was done by looking for any “out of range values” using the ‘Descriptive’ and ‘Frequencies’ commands using PASW version 18 statistical software. The results showed that there were no out of range values,

suggesting that no errors were found and the data is considered “clean” for further examination of proposed relationships.

4.7.2 Checking for Outliers

Outliers, as defined by Hair et al. (2010) refer to scores that have substantial differences between the actual and predicted values of the observations. They may occur due to errors in data entry. In order to detect cases that have standardised residual values above 3.0 or below -3.0, the casewise diagnostics was checked (Pallant, 2007). For any case found, Cook’s Distance in the residual statistics table was checked in order to determine whether these cases were having any undue influence on the regression results. According to Tabachnick and Fidell (2007), any value larger than 1.0 is a potential problem and should be considered for removal.

In this research, the investigation on the casewise diagnostics identified three cases (case number 27, 35 and 98) with a residual value 3.1, -4.8 and -3.6 respectively, which was above 3.0 and below -3.0 (Pallant, 2007). Further investigation found that, the respondent for case 27 recorded a total knowledge sharing success score of 90, but the predicted value was 65.2, indicating that knowledge sharing was more successful than predicted. Respondents for cases 35 and 98, on the other hand, recorded a total knowledge sharing success score of 32 and 55, but the predicted value was 70.9 and 83.9 respectively, indicating knowledge sharing was less successful than predicted. An inspection on the value of Cook’s Distance indicated that the value was 0.161, which was less than 1.0. Thus, as suggested by Pallant (2007), it was not considered as a major problem and these case numbers were retained. This suggests that none of the cases was removed from the data set. Table 4.5 summarises these findings.

Table 4.5

Casewise Diagnostics Statistics

Case Number	Std. Residual	Knowledge sharing success	Predicted Value	Residual
27	3.073	90.00	65.1609	24.83910
35	-4.809	32.00	70.8681	-38.86810
98	-3.587	55.00	83.9941	-28.99415

a. Dependent Variable: Knowledge sharing success

4.7.3 Checking Multivariate Assumptions

Hair et al. (2010) suggest that before any statistical analysis is undertaken, researchers should check whether the assumptions underlying multivariate analysis are met or not. These assumptions are multicollinearity, normality, linearity, homoscedasticity and independence of residuals. The checking of these assumptions is described below.

4.7.3.1 Multicollinearity

According to Hair et al. (2010), multicollinearity refers to the relationship among the independent variables and the presence of multicollinearity is not desirable because as it increases, the predictive power of the independent variable decreases (Tabachnick & Fidell, 2007). In order to determine whether or not multicollinearity existed in this research, the correlation matrix for all variables was checked. A correlation above 0.90 (Hair et al., 2010) or above 0.70 (Pallant, 2007) is the first indicator of multicollinearity. However, Hair et al., (2010, p.101) also suggest that a “lack of any high correlation values, does not ensure a lack of collinearity...as it may be due to the combined effect of two or more other independent variables, termed multicollinearity”. Therefore, the ‘collinearity diagnostic’ was checked to examine the value of tolerance and its inverse, the variance inflation factor (VIF). Tolerance, is defined by Hair et al. (2010) as the amount of variability

of the selected independent variable not explained by the other independent variables. According to Pallant (2007), the tolerance value of less than 0.10, or a VIF value of above 10 are the cut-off points for determining the presence of multicollinearity.

As shown in Table 4.6, the correlation matrix indicated that all the correlation values were below either 0.70 or 0.90. A further inspection of the value of tolerance indicated that all values were greater than 0.10. This was supported by the variance inflation factor (VIF) values which were below the cut-off of 10 (see Table 4.7). Thus, multicollinearity was not a problem.

Table 4.6

Correlation matrix for variables

Variables	Y1	X1	X2	X3	X4	X5	X6	X7	X8	X9
Y1:KSS[a]	1.000									
X1:Collaboration	.507**	1.000								
X2:Innovativeness	.428**	.547**	1.000							
X3:Formalisation	.327**	.505**	.227**	1.000						
X4:Expertise	.516**	.586**	.420**	.377**	1.000					
X5:Autonomy	.148*	.090	-.013	-.070	.093	1.000				
X6:Trust	.383**	.363**	.203**	.265**	.423**	.477**	1.000			
X7:Ability	.498**	.499**	.500**	.300**	.513**	.056	.180**	1.000		
X8:Motivation	.553**	.510**	.404**	.421**	.528**	.176**	.373**	.699**	1.000	
X9:Opportunity	-.203**	-.318**	-.241**	-.361**	-.240**	.166**	.046	-.371**	-.355**	1.000

a. KSS: Knowledge sharing success

** Correlation is significant at the 0.01 level (2-tailed); * Correlation is significant at the 0.05 level (2-tailed)

Table 4.7

Coefficient for variables

Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.	95% Confidence Interval for β		Correlations			Collinearity Statistics	
	β	Std. error	β			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1 (Constant)	14.023	6.682		2.099	.037	.862	27.184					
Collaboration	.469	.267	.127	1.757	.080	-.057	.994	.507	.112	.085	.446	2.241
Innovativeness	.632	.323	.120	1.957	.051	-.004	1.269	.428	.124	.094	.615	1.625
Formalisation	.089	.229	.024	.388	.699	-.362	.539	.327	.025	.019	.628	1.592
Expertise	.897	.383	.156	2.344	.020	.143	1.650	.516	.148	.113	.526	1.902
Autonomy	.063	.266	.014	.238	.821	-.461	.588	.148	.015	.011	.698	1.432
Trust	.386	.196	.127	1.970	.050	.000	.771	.383	.125	.095	.555	1.802
Ability	.693	.463	.113	1.497	.136	-.219	1.604	.498	.095	.072	.406	2.460
Motivation	1.185	.399	.228	2.969	.003	.399	1.970	.553	.186	.143	.394	2.537
Opportunity	.096	.204	.027	.472	.638	-.305	.497	-.203	.030	.023	.733	1.365

a. Dependent Variable: Knowledge sharing success

4.7.3.2 Normality

The assumption of normality is that errors of prediction are normally distributed about the predicted dependent variables score (Tabachnick & Fidell, 2007). A normal probability plot, which compares the actual data values with the normal distribution, was used to check this assumption. The normal distribution forms a straight diagonal line and the plotted data values are compared with this diagonal (Hair et al., 2010). The data plot will follow this diagonal if the assumption of normality holds.

In this research, the plotted residual value lay in a reasonably straight diagonal line from bottom left to top right (see Figure 4.2 for the normal probability plot), suggesting that the assumption of normality was met.

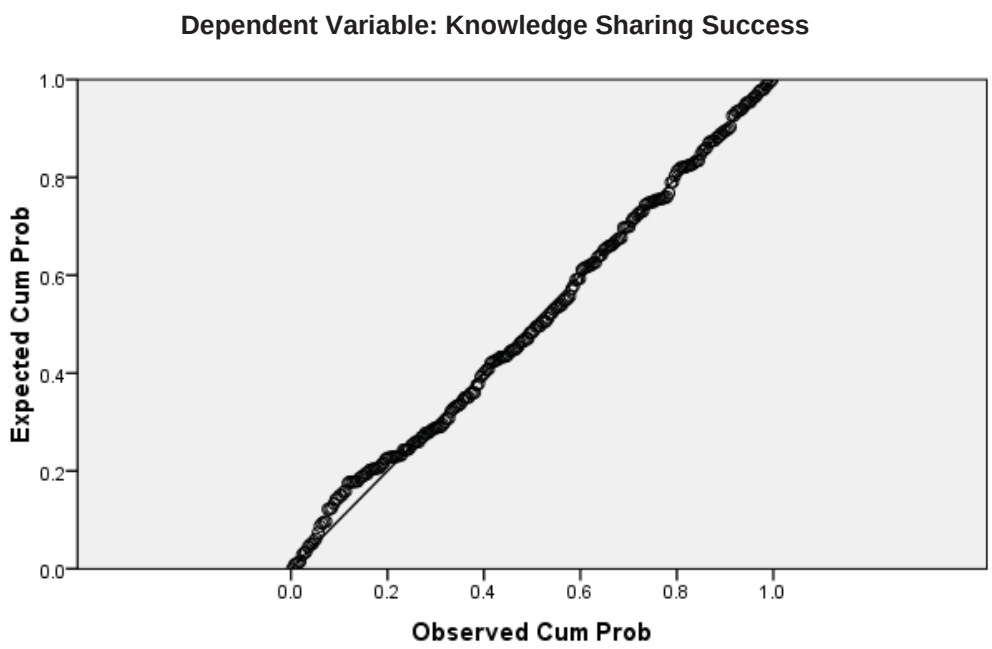


Figure 4.2. The Normal Probability Plot (P-P) of the Regression Standardised Residual

4.7.3.3 Linearity, Homoscedasticity and Independence of Residuals.

The multivariate assumptions for linearity, homoscedasticity and independence of residuals were checked simultaneously. The linearity of the relationship between dependent and independent variables represent the degree to which the change in the dependent variables is associated with the independent variable. As correlations represent only the linear association between variables, non-linear effects would result in underestimation of the actual strength of the relationship (Hair et al., 2010). The assumption of homoscedasticity, on the other hand, refers to the assumption that "dependent variables exhibit equal levels of variance across the range of predictor variables" (Hair et al., 2010, p. 74). Homoscedasticity is good because it means the variance being explained between the dependent and independent variables is not confined to a limited range of independent values (Hair et al., 2010). The assumption that the variance of the residuals is the same for all predicted scores explains the independence of residuals (Hair et al., 2010). These assumptions were checked by examining a scatterplot of the standardised residuals.

The scatterplot indicated that the scores were rectangularly distributed and concentrated in the centre (along the 0 point), indicating that it met the assumptions for linearity, homoscedasticity and independence of residuals as described by Hair et al. (2010), Pallant (2007) and Tabachnick and Fidell (2007). The scatterplot presented in Figure 4.3 summarises these findings.

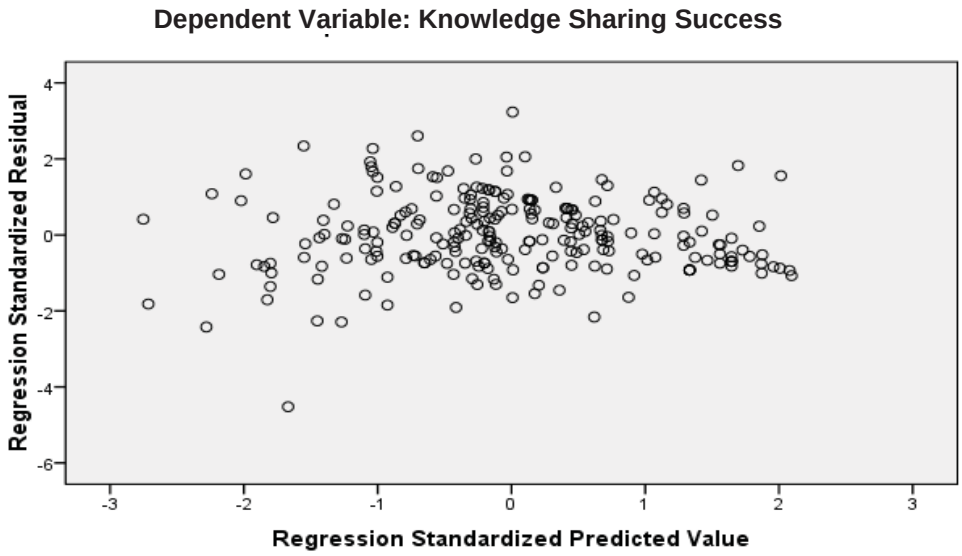


Figure 4.3. Scatterplot of standardised residuals

4.8 SCALE RELIABILITY

Reliability refers to the measure of the degree to which a set of indicators of a latent construct is internally consistent based on how highly interrelated the indicators are with each other (Hair et al., 2010). Field (2005) refers to reliability as the fact that a scale should consistently reflect the construct it is measuring. There are two forms of reliability; 1) test-retest, by which consistency of the items within the scale and stability of the scale over time is measured in order to ensure that measurement taken at any point of time is reliable (Hair et at., 2010); 2) internal consistency, which applies to the homogeneity of the items within a scale (DeVellis, 2003) and Hair et al. (2010) suggests the reliability coefficient with Cronbach's alpha is one of the diagnostic measures that assesses internal consistency.

In this research a reliability test using Cronbach's alpha was applied, to determine which items within the scale most reliably represented each construct. This guideline provided by DeVellis (2003) was used to check the internal consistency of the entire scale:

Below 0.60 (unacceptable);
Between 0.60 and 0.65 (undesirable);
Between 0.65 and 0.70 (minimally acceptable);
Between 0.70 and 0.80 (respectable);
Between 0.80 and 0.90 (very good); and
For values above 0.90, one should consider shortening the scale

In this research, the desired cut-off for Cronbach's alpha was 0.65 because this value is the minimally acceptable level of internal consistency reliability (DeVellis, 2003). The findings were discussed in more detail in Chapter 5 (Results chapter).

4.9 CONSTRUCT VALIDITY

Validity, as defined by Hair et al. (2010, p.126) explains the extent to which 'scale or set of measures accurately represents the concept of interest under investigation'. In this research, construct validity was examined through both content and discriminant validity. Content validity or face validity was assessed through feedback on the format, ease of understanding and relevance of questions in the draft questionnaire obtained from two academics in the area, the research supervisors, panel of experts and the 20 test subjects from the pilot study (see section 4.2.1, step 6 & 7). As such, the following discussion in this section is limited to the statistical analysis undertaken to examine discriminant validity.

The degree to which items differentiated amongst constructs or measured distinct concepts, is the discriminant validity of the measures, and "correlations between the measures of potentially overlapping construct" was examined for this reason (Igbaria, Guimaraes, & Davis, 1995, p. 99). Based on the work of other scholars, they further state that if the items comprising the measures of constructs correlate more highly with each other than with items measuring other constructs in the model, then discriminant validity is evident. Discriminant validity analysis was undertaken using cross-loading where individual items were correlated with each construct in order to ensure

the questions comprising each construct were those most highly correlated with that construct and relatively lowly with the other items (Igbaria et al., 1995; Quaddus & Hofmeyer, 2007). In the cases where an item correlated relatively highly with two different components, the construct with the high correlation and the higher reliability score (Cronbach's α) was selected. Further discussions are detailed in the results chapter (Chapter 5).

4.10 METHOD OF ANALYSIS

This section describes the statistical techniques chosen for this study to answer the four research questions addressed in this research. This will be described below.

4.10.1 Exploratory Factor Analysis

Exploratory factor analysis (EFA) was undertaken to explore and classify the best items that can represent the constructs under study. This Pallant (2007, p.179) suggests is "looking for a way to summarise the large data becoming a smaller set of factors or components". It was therefore, necessary to identify the structure of variables that contributed to the construct in order to avoid problems in interpretation of the extent to which each variable may affect outcomes (Field, 2005). Since the scales used to assess perceptions of organisational culture and perceived level of knowledge sharing capability combined measures from a number of different studies, it was necessary to confirm their dimensionality empirically. Thus, in this research, exploratory factor analysis was used to confirm the dimensions of the concepts that have been operationally defined as well as to indicate which of the items were most appropriate for each dimension (Hair et al., 2010; Spector, 1992). Factor analysis was undertaken using PASW version 18. The procedures undertaken were explained below.

4.10.1.1 Identifying Univariate Outliers

Each item for each variable in the conceptual framework was checked using z-scores in order to detect any case that had values more than ±3 standard deviations from the mean of the variables (Tabachnick& Fidell, 2007). If any outlier was found, the case with the outlier was removed from the analysis. In this research, no outliers were found; therefore none of the cases was removed from the data set.

4.10.1.2 Accessing the Characteristics of Matrices

Next, the correlation matrix was examined in order to check the factorability among the items, and the strength of the inter-correlations among the items for evidence of coefficients greater than 0.3 (Pallant, 2007; Tabachnick & Fidell, 2007). Factor analysis may not be appropriate if few correlations above 0.3 are found (Pallant, 2007). In examining the characteristics of matrices, Pett, Lackey, & Sullivan's, (2003) suggestion was followed. The following steps were undertaken:

- *Examining the correlation matrix*. If there are many coefficients greater than 0.3, the determinant of a matrix would then be evaluated. According to Pett et al. (2003) the determinant of a matrix is a unique numeric value that is associated only with square matrices and is critical for determining whether or not a given square matrix will have an inverse (Hays, 1994 cited in Pett et al., 2003). This relationship is essential to the undertaking of mathematical operations of matrices (Pett et al., 2003). When insufficiently strong correlations are found among the items, then the poorly correlated item is dropped from the analysis and the matrix re-run.

- *Evaluating the determinant of a matrix*. If the determinant |R| value is equal to 0.000 the correlation matrix is a singular matrix, not positive definite, suggesting that some items are too highly correlated and dropping the highly correlated items is recommended. If, however, the

determinant |R| value is equal to 1.0, the correlation matrix is an identity matrix, suggesting that the factor analyses are inadvisable. The determinant |R| value should be bigger than 0.0 and smaller than 1.0 (0.0 < |R| <1.0) if the data are suitable for factor analyses be undertaken (Pett et al., 2003).

- *Examining Bartlett's test of Sphericity.* Bartlett's test of Sphericity shows whether the correlation matrix is an identity matrix, which would indicate that the factor model is inappropriate (Pett et al., 2003). The Bartlett's test of Sphericity should be statistically significant at $p < 0.05$, suggesting a sufficient minimum sample size and the correlation matrix is not an identity matrix. If the Bartlett's test of Sphericity is not significant at $p < 0.05$, it indicates the sample size is insufficient relative to the number of items. It is advisable then to increase the sample or reduce the number of items and re-run the matrix, or else factor analyses are inadvisable.

- *Examining the Kaiser-Meyer-Olkin (KMO) and individual Measures of Sampling Adequacy (MSA) value.* The KMO statistic indicates the sufficient sample size relative to the number of items in the scale and MSA suggests whether or not the correlations among the individual items are strong enough to indicate the correlation matrix is factorable. The minimum recommended value for both KMO and individual MSA are 0.60 (KMO > 0.6) and 0.70 (MSA > 0.70) respectively (Hair et al., 2010; Pallant, 2007; Pett et al., 2003). According to Hair et al. (2010), the MSA values for individual items should be examined to identify potentially problematical items and to eliminate any that did not meet the minimum recommended value. If there are any, they will be eliminated from factor analysis one at a time, with the smallest one being omitted each time and a new matrix solution that excludes the eliminated items should then be undertaken and the results revaluated (Hair et al., 2010; Pett et al., 2003).

4.10.2 Analysis of Variance (ANOVA)

Analyses of variance (ANOVA) were undertaken to examine the impact of subgroups of employees (management versus non-management) on the level of knowledge sharing capability, organisational culture and knowledge sharing success. The aim was to decide whether or not further analysis should distinguish respondents by subgroups of employees.

4.10.3 Correlations

Correlation analyses using the Pearson were undertaken between all constructs in the model to identify significant correlations existing between the constructs. When examining the strength of the relationship between all constructs, the researcher used the guidelines provided by Cohen (1988):

r = 0.10 to 0.29 small
r = 0.30 to 0.49 medium
r = 0.50 to 1.00 large

Significant correlations between the dependent and independent variables lent support to the use of regression analysis as the next step. Details of the findings on correlation analyses were discussed in the findings chapter (Chapter 5).

4.10.4 Regression Analysis

Multiple regression analyses were also conducted to identify significant relationships existing between the variables (perceptions of knowledge sharing capability; perceptions of organisational culture; and perceptions of knowledge sharing success) presented in the conceptual framework.

4.11 CHAPTER CONCLUSION

This chapter has provided an overview of the approached taken in undertaking the research. A multiple items questionnaire was used to measure the variables mentioned in the conceptual framework. Sampling methods and participant demographics were also provided along with an explanation of the creation of constructs for investigation, including procedures undertaken for data collection, data analysis strategy and both reliability and validity testing. A sample of 500 knowledge workers of Malaysian-owned IT organisations with MSC status that employed more than 100 personnel, located in two states of Malaysia were chosen. The statistical techniques used to address the research questions include factor analysis, ANOVA, Pearson correlations, and multiple regression analyses**.** The next Chapter will describe the findings of this research.

CHAPTER 5: RESULTS

5.1 INTRODUCTION

This chapter outlines the sample characteristics and presents the findings of the data analyses collected for each research question. The chapter begins with the description of respondent sample characteristics, followed by the measurement results for research variables that include factor analyses, scale reliability, construct validity and ANOVA. The results of Pearson's correlation and regression analyses used to investigate the relationships proposed in this research are then presented. Finally the chapter concludes with a summary of the findings. The implications and inferences from these findings will then be fully discussed in Chapter 6.

5.2 DESCRIPTION OF RESPONDENT SAMPLE CHARACTERISTICS

The purpose of this section is to provide an overview of the characteristics of the sample of this study. The final sample of 270 IT employees comprises people from the major ethnicities in Federal Territory and Klang Valley and nearly equal numbers of men and women. It has not been possible to evaluate how typical this is of the Malaysian IT workforce, as neither government nor MSC status companies' statistics are available. Table 5.1 provides the breakdown of the sample by gender and indicates an even distribution of male and female participants across the sample (49.3% male and 50.7% female respondents). The questionnaire was open to all employees within the organisations approached; there was no intentional request for similar numbers of male and female participants.

Table 5.1

Demographic Characteristics of the Respondents

Demographic Variables	Frequency (*n* = 270)	%
Gender		
Male	133	49.3
Female	137	50.7
Age		
Less than 26 years	42	15.6
26-30 years	48	17.8
31-35 years	71	26.3
36-40 years	55	20.4
41-45 years	34	12.6
46-50 years	16	5.9
More than 50 years	4	1.5
Highest qualification		
PhD	1	0.4
Master	34	12.6
Bachelor or equivalent	173	64.1
Diploma	51	18.9
Other	11	4.1
Length of time working in the organisation		
Less than 2 years	61	22.6
2-5 years	133	49.3
6-9 years	28	10.4
More than 10 years	48	17.8
Department in the organisation		
Administration	26	9.6
R& D	38	14.1
Operation	146	54.1
Other	60	22.2
Length of time in the mentioned department		
2-5 years	119	44.1
6-9 years	63	23.3
More than 10 years	87	32.2
Position in the organisation		
Manager	70	25.9
Executive	153	56.7
Clerk/Office Assistance	16	5.9
Other	31	11.5
Ethnic group		
Bumiputra	190	70.4
Chinese	49	18.1
Indian	23	8.5
Other	8	3.0
Preferred language		
English	197	73.0
Bahasa Malaysia	73	27.0

The ages of participants show a normal distribution with a majority of participants (26.3% of total respondents) within the age range of 31 to 35 years old. The smallest proportion of the respondents is the over 50 year age group who accounted for only 1.5 % of the total respondents. This is followed by the group of respondents in the range of 46 to 50 years old, which account for 5.9 %.

The educational level of the respondents was generally high. The highest qualification possessed indicates that the majority of the participants had obtained tertiary education. University/professional degree holders make up 64.1% of the respondents. Respondents with college/university diploma qualifications are 18.9% of the total sample and those with Masters and PhDs make up 12.6% and 0.4% of the sample respectively. Respondents with “Other” qualifications make up 4.1% of the sample.

54% of the sample is in the “Operations” department whilst those in “Other” departments make up 22.2% of the total sample. Respondents working in “Research & Development” represent 14.1% and another 9.6% of the population works in “Administration” departments.

Questions of length of service within the organisation and current department, indicates the majority of participants have been in both organisation (49.3 per cent) and current department (44.1 per cent) for between two to five years. Participants’ responses to position-type categories found the majority hold ‘Executive’ positions (56.7 per cent). Managerial positions, on the other hand, account for 25.9 per cent. Those working as “Clerk or Office Assistant” make up 5.9 per cent and those held position as “Other” are 11.5 per cent of the population.

In terms of ethnic groups, 70.4 per cent of total sample is ‘Bumiputra’ (sons of the soil, a composition of Malays and indigenous people), which comprise the large sample drawn for this research. Other respondents are “Chinese” (18.1 per cent), “Indian” (8.5 per cent) and “Other” ethnicities 3 per cent.

When preferred language is examined, the majority (73 per cent) of the participants indicate ‘English’ as their most preferred language for responding to the questionnaire.

5.3 MEASUREMENT RESULTS FOR RESEARCH VARIABLES

The research is designed to examine the relationship between the ‘perceived level of knowledge sharing capability’ (perceptions of ability, motivation, and opportunity), ‘perceptions of organisational culture’ (perceived value of collaboration, innovativeness, formalisation, expertise, autonomy, and trust), and ‘perceptions of knowledge sharing success’. The term ‘variable’ is used in the following sections to indicate the constructs developed from the literature and identified through factor analysis. Pearson product-moment correlation coefficients and multiple regression analyses were computed to determine the relationships between variables identified in the conceptual framework (see Figure 3.2, p.85).

The acknowledged importance of human attributes or human resource (HR) sharing capability and organisational culture to the knowledge sharing outcomes is stressed in the literature (Cummings & Teng, 2003; De Long & Fahey, 2000; Hislop, 2002, 2003; Lin, 2007; Minbaeva et al., 2003; O’Dell & Grayson, 1998; Siemsen et al., 2008). It was proposed that the perceived level of knowledge sharing capability (perceptions of ability, motivation, and opportunity) and perceptions of organisational culture (perceived level of collaboration, innovativeness, formalisation, expertise, autonomy, and trust) would have positive relationships with perceptions of knowledge sharing success. Therefore the analysis examined whether the perceived level of knowledge sharing capability (perceptions of ability, motivation, and opportunity) was associated with more acceptable and desirable perceptions of organisational culture (perceived level of collaboration, innovativeness, formalisation, expertise, autonomy, and trust) as well as higher perceptions

of knowledge sharing success. The next section will explain the results obtained in each stage involved in more detail.

5.3.1 Factor Analysis

In this research, the 51 items in the three sections of the questionnaire that formed the dataset were factor analysed to verify that they clustered into the 10 constructs in the conceptual framework (see Figure 3.2). Principal factor extraction procedures (i.e. principal component and common factors) are used to explain as much of the variance in the original data set with a simple solution and the fewest factors possible (Gorsuch, 1983; Pallant, 2007). Gorsuch (1983, p. 97), concludes that the principal factor approach is a good solution for factor extraction because "factor analysis is generally undertaken in order to reduce the number of variables, while still maximising the amount of information retained". The author suggests that:

> "Principal component analysis is the extraction of principal factors.....applied to the correlation matrix with unities as diagonal elements (p.99).....If it is applied to the correlation matrix where the diagonals have been adjusted to communality estimates, common factors result" (p. 94)

In this research, principal components analysis (PCA) was used to identify (extract) and compute composite coping scores for the factors underlying the constructs under study. This is because, without an alteration to the main diagonal, the procedure creates the component factors by endeavouring to include all the variance of each variable on the assumption that all the variance is relevant. Additionally, a truncated set of components can be produced because the smaller factors (e.g. those with a sum of squared loadings less than 3.00, and those that do not replicate) are dropped (Gorsuch, 1983).

Orthogonal rotation that assumes the uncorrelated underlying constructs is used for easier solutions interpretation and reporting (Tabachnick & Fidell, 2007). According to Pallant (2007), the varimax rotational technique, which attempts to minimise the number of higher loading variables on each factor, is the most common orthogonal approach used in research. In this research, varimax rotation is applied to increase the dispersion of loadings within factors so that each factor is associated with a cluster of a small number of variables most highly related to it (Field, 2005). In short, varimax rotation is applied to increase the interpretability of factor rotation (Hair et al., 2010) because the "variance is maximised across all factors in the matrix" (Gorsuch, 1983, p. 185). As such, all variables with small loadings that create difficulties for interpretation are eliminated (Gorsuch, 1983).

Prior to performing PCA, z-scores for all measurement items were computed and none of the values had more than ±3 standard deviations from the mean of the variables, suggesting that there are no univariate outliers (Tabachnick & Fidell, 2007). The suitability of data for factor analysis was also assessed following the guidelines recommended by Pett et al. (2003). Inspection of the correlation matrix revealed the presence of many coefficients of 0.3 and above. The determinant |R| value was 0.025 indicating the correlation matrix is neither an identity matrix nor a singular matrix.

The principal components factor analysis was run with eigenvalues set at > 1 and a maximum of 25 iterations. This resulted in the identification 11 components, which accounted for 64.26% of total variance. The resulting varimax rotated component showed that majority of items in the knowledge sharing success section (16 out of 18 items) were clustered as expected. While 6 out of 9 items for knowledge sharing capability were clustered, the distribution patterns for organisational culture were not consistent with previous studies utilising the similar items measuring these constructs. However, when analysing the items on these components, some interpretable dimensions of employees' perception of organisational culture can be identified. Appendix D summarises these findings.

To further confirm the distribution pattern of the constructs, principal axis factoring (PAF) was also used to extract and compute composite coping scores for the factors underlying the constructs under study. The 51 items were then factor analysed with eigenvalues set at > 1 and a maximum of 25 iterations. This was also resulted in the identification 11 components, which accounted for 54.89% of total variance (see Appendix E). The resulting varimax rotated component also showed that majority of items in the knowledge sharing success and knowledge sharing capability sections were clustered as expected. The distribution patterns for organisational culture were also not consistent with previous studies utilising the similar items measuring these constructs. This suggests that both extraction methods produced similar results however PAF showed less total variance explained. Therefore, to identify the underlying dimensions of constructs under study, PCA with orthogonal varimax rotation's component was chosen and used for further interpretation and analysis.

Principal component analysis revealed the presence of eleven components with eigenvalues exceeding 1, explaining 26.9%, 7.5%, 6.1%, 4.5%, 3.5%, 3.1%, 2.9%, 2.7%, 2.6%, 2.4% and 2.1% of the variance respectively. An inspection of the scree plot (see Figure 5.1) also reveals a clear break after the eleventh component. The rotated solution reveals the presence of a simple structure with all components showing a number of strong loadings and all variables loading substantially on only one component (DeVellis, 2003; Hair et al., 2010; Pallant, 2007). Bartlett's Test of Sphericity reached statistical significance (7031.475, ρ = 0.000) and confirmed the multivariate normality of the data. The Kaiser-Mayer-Olkin (KMO) measure of sampling adequacy, a measure of whether the distribution of values is adequate for conducting factor analysis, is 0.895, which is acceptable and accounted for 64.26% of total variance. All MSA values for individual items exceed the recommended value of 0.70 supporting the factorability of the correlation matrix.

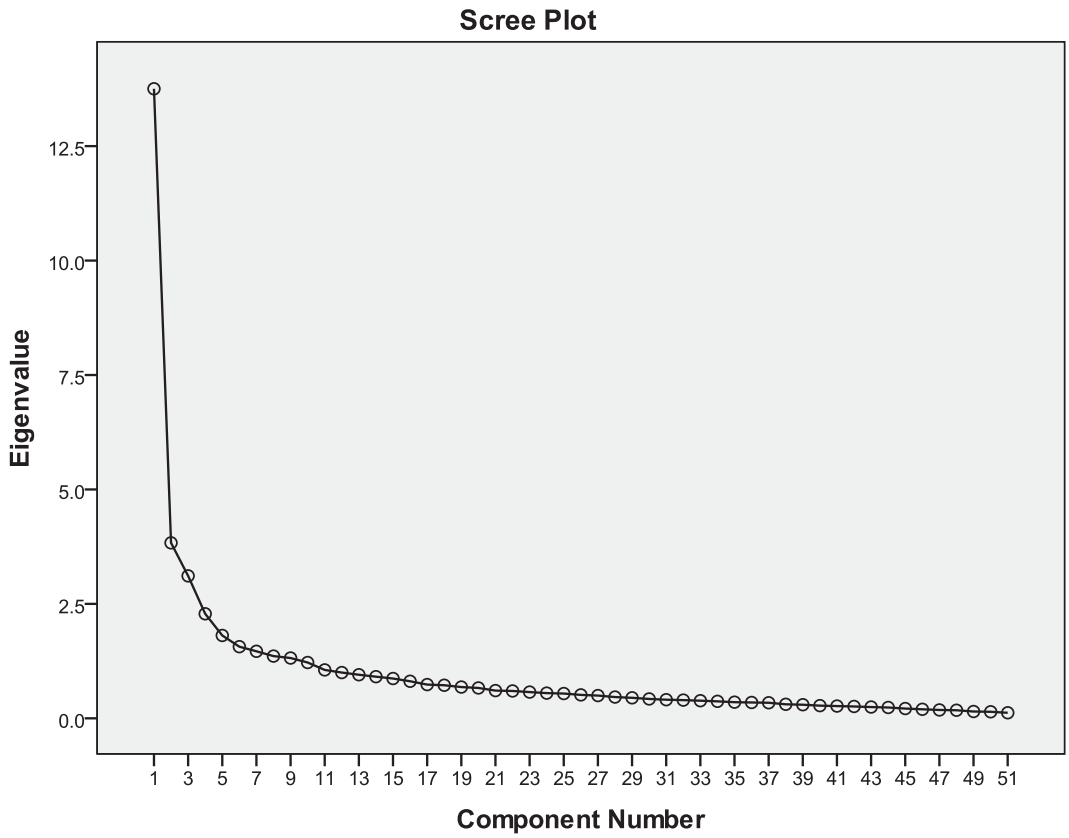


Figure 5.1. Scree Plot for all the 51 items by Principal Component Analysis

The statistical significance of item loadings was assessed using the guidelines recommended by a number of researchers (Field, 2005; Hair et al., 2010; Pett et al., 2003; Tabachnick & Fidell, 2007). For example, Field (2005) suggests that only items with loadings greater than ±0.40 are considered significant and used in defining factors. Hair et al. (2010) provide clearer guidelines for identifying significant item loadings based on sample size. As the sample size used in this research is n=270, the cut-off point chosen for item loading is 0.35 and any items below this cut-off should not be displayed in the results (Hair et al., 2010).

Component 1 (see Table 5.2) clearly represents knowledge sharing success that comprises 17 items, all of which addressed knowledge internalisation activities, the extent to which recipients obtain ownership of, commitment to, and satisfaction with transferred knowledge.

Table 5.2
Factor loadings of knowledge sharing successs

Items/Components	Loadings	Dimension / α Scores
Component 1		
49. Employees have developed an intimate understanding of this knowledge	.792	Knowledge sharing success 0.943
44. Employees care about the implementation of this knowledge	.770	
54. Employees feel that, for them, this (the transferred knowledge) is the best of all knowledge to work with	.760	
51. Employees feel that deciding to work with this knowledge is a great decision on their part	.745	
52. Employees willing to put in a great deal of effort beyond that normally expected to help this knowledge transfer to be successful	.745	
46. Employees have been inspired by this knowledge to do their very best performance	.726	
48. Employees feel a sense of responsibility on how this knowledge can be used.	.712	
50. Employees present this knowledge to their friends as important to the organisation's success	.704	
56. Employees are satisfied with the quality of the knowledge transfer process	.692	
58. Employees have been able to exercise a great deal of discretion about how this knowledge was transferred and how it is used.	.687	
55. Employees are pleased that they learned this knowledge over other knowledge that they could have learned instead	.686	
47. Employees are satisfied with the quality of the knowledge	.680	
53. Employees feel that there is very much to be gained personally by continuing to work with this knowledge	.678	
43. Employees feel a very high degree of personal ownership of this knowledge	.650	
59. Employees have changed their satisfaction with the knowledge once they gained experience with this knowledge (transferred knowledge)	.648	
45. Employees are proud to tell others that they are working with this knowledge	.582	
60. Employees have significantly invested their time, ideas, skills, and physical, psychological, and intellectual energies in this knowledge and the related transfer processes.	.458	
Eigenvalues	13.752	
Percent total variance	26.97	

Items comprising component 3 incorporated those which addressed ability, motivation and opportunity to share knowledge (see Table 5.3). Component 3, considered knowledge sharing capability describes those who are beliefs about being capable to create degree of similarity between transfer parties

and their determination to do so to be loyal to the organisation and maintain its knowledge retention for successful knowledge sharing.

Table 5.3

Factor loadings of knowledge sharing capability

Items/Components	Loadings	Dimension / α Scores
Component 3		
42. If employees have their own way, they will continue working with this organisation	.717	
35. Employees have the knowledge base necessary to easily understand and apply transferred knowledge	.699	
41. The sender (source of knowledge) has the knowledge base necessary to easily understand the receiver plans to use the transferred knowledge	.685	Knowledge sharing capability 0.786
40. Employees have thought seriously about leaving this organisation.	.608	
36. Differences in basic work knowledge make discussions very difficult	.506	
34. Employees have sufficient training and job rotation opportunities during their professional life	.476	
Eigenvalues	3.112	
Percent total variance	6.10	

While there is no clear indication that organisational culture items are clustered, reviewing the wording and interpretation of those items in component 2, 4, 5, 6, 7, 8, 9, 10, and 11 some interpretable dimensions of employees' perception of organisational culture can be identified.

Cronbach's alpha was computed on each of the Likert scales items contained in the survey instrument. The alpha coefficients for the components in Table 5.2 show that the majority are highly reliable and acceptable, with alpha scores exceeding 0.6; over the threshold recommended by Hair et al. (2010) for exploratory research and meeting the desired 0.65 cut-off value for this research (DeVellis, 2003). The value of the alphas indicates that each of the scales possessed a moderate to high level of internal consistency. The overall alpha for the scale was found to be 0.919.

Based on the reliability alpha score, only six components were used for further analyses. The alphas for Component 1, 2, 3, 5, 6, and 7 scales are found to be 0.943, 0.821, 0.786, 0.695, 0.894, and 0.671 respectively. Component 4, 8, 9, and 10 were dropped from subsequent analysis because

the alpha score is too low. Component 11 was dropped from further analysis due to less than two items loaded in the component. Table 5.4 summarises these findings.

Table 5.4
Factor loadings of dropped items

Items/Components	Loadings	Dimension / α Scores
Component 4		
32. Employees want to share knowledge with their co-workers in order to gain recognition and status	0.801	This factor was dropped due to low Alpha scores (α = 0.307)
57. Employees resent the continued control that the source has over how to use this knowledge	0.768	
27. Employees put much value on taking risks even if that turns out to be a failure	0.659	
Eigenvalues	2.284	
Percent total variance	4.478	
Component 8		
39. Employees have little training and job rotation opportunities allocated during their professional life	.865	This factor was dropped due to low Alpha scores (α = 0.371)
37. The additional training and job rotation opportunities that employees have during their professional life are limited	.692	
Eigenvalues	1.359	
Percent total variance	2.665	
Component 9		
15. Employees wish they could oversee the work of their co-workers.	.690	This factor was dropped due to low Alpha scores (α = 0.268)
14. There is a willingness to accept future responsibility.	.655	
23. Expertise expedites the flow of knowledge within the organisation	.470	
Eigenvalues	1.317	
Percent total variance	2.582	
Component 10		
18. Employees can ignore the rules and reach informal agreements to handle some situation	.601	This factor was dropped due to low Alpha scores (α = 0.425)
12. The job permits employees to decide on their own how to go about doing the work	.458	
38. Employees do not expect to stay with this organisation very much longer	.354	
Eigenvalues	1.219	
Percent total variance	2.390	
Component 11		
16. Employees are encouraged to suggest ideas for new opportunities	.528	This factor was dropped due to less than two items loaded
Eigenvalues	1.057	
Percent total variance	2.073	

The new identified components were then renamed, and Pett et al.'s (2003) recommendation on using the highest loadings item is closely followed.

Component 2 (see Table 5.5) incorporated those which addressed the perceived value of formalisation, collaboration, trust and innovativeness. This component is renamed as “formal collaboration”, which describes the ability of organisations to improve successful knowledge sharing by encouraging employees to actively participate in organisational activities, and to develop a sense of “collaboration” amongst organisational members through formal and responsive management strategies. These may develop employees’ formal and informal networks and the breadth of knowledge sharing within organisation by strengthening weaker ties (Alavi et al., 2005).

Table 5.5
Factor loadings of formal collaboration

Items/Components	Loadings	Dimension / α Scores
Component 2		
24. Contacts with our organisation are on a formal or planned basis	.770	Formal collaboration 0.821
21. Employees are satisfied by the degree of collaboration	.708	
11. Employees are supportive	.676	
29. Employees feel confident that the organisation will always try to treat them fairly	.614	
20. Employees are encouraged to find new methods to perform a task	.515	
17. There is a willingness to collaborate across organisational units.	.480	
Eigenvalues	3.833	
Percent total variance	7.52	

When reviewing items comprising Component 5 (see Table 5.6), it is clear that this component incorporated all questions posed in regard to autonomy and trust. Whilst the factor analysis does not separate these items clearly into autonomy and trust, reviewing the wording and interpretation enabled the identification of the importance of trust in knowledge sharing. Component 5 is then labelled as “trustworthiness”. This identification of trustworthiness dimension fits well with the definition of trust used by Cook and Wall (1980, p. 40) in their research on new work attitude measures of trust, organisational commitment and personal need non-fulfilment, which define trust as “the faith in the trustworthy intentions of others and confidence in the ability of others”.

Table 5.6

Factor loadings of trustworthiness

Items/Components	Loadings	Dimension / α Scores
Component 5		
30. The job denies employees any chance to use their personal initiative or judgment in carrying out the work	.791	Trustworthiness 0.695
31. The job is arranged so that employees do not have the chance to do an entire piece of work from beginning to end	.772	
33. If possible employees would not give their co-workers any influence over issues that are important to their successful completion of organisational tasks	.493	
22. Employees feel that they will not be able to count on their co-workers to help them	.406	
Eigenvalues	1.81	
Percent total variance	3.55	

Items comprising Component 6 incorporated items of those which addressed expertise and collaboration. All the items incorporated in Component 6 were then named as “expertise” to demonstrate that employees stress the importance of recognition as an expert and helpful employees for successful knowledge sharing. Table 5.7 summarises these findings.

Table 5.7

Factor loadings of expertise

Items/Components	Loadings	Dimension / α Scores
Component 6		
19. Employees are motivated to share knowledge in order to be known as an expert	.867	Expertise 0.894
10. Employees are helpful	.818	
Eigenvalues	1.565	
Percent total variance	3.07	

When analysing those items comprising Component 7 (see Table 5.8), it is clear that this component incorporated questions that explain respondents’ perceptions of “self-determination” with flexibility of specific rules and procedures in executing tasks. Component 7, labelled “independence” portrays concerns with openness, nonconformity and risk taking (if decisions made fail), and these concerns are considered an essential element for successful knowledge sharing. This resonates with Gold, Malhotra and Segars’s (2001) view that organisations with more open and supportive value

orientations are predisposed toward constructive knowledge behaviours such as employees sharing insights with others.

Table 5.8
Factor loadings of independence

Item/Component	Loadings	Dimension / α Scores
Component 7		
26. Employees can ignore the rules and reach informal agreements to handle some situation	.732	
25. The job permits employees to decide on their own how to go about doing the work	.717	Independence 0.671
28. There are many activities associated with employees' work that are not covered by formal procedures	.612	
13. Employees make their own rules on the job	.491	
Eigenvalues	1.464	
Percent total variance	2.87	

5.3.2 Construct Validity

As content validity has been explained in the questionnaire design of Chapter 3, the discussion in this section is limited to the statistical analysis undertaken to examine discriminant validity. The exploratory factor analyses (in the previous section) show these high correlations between variables comprising each component and low correlation with other components. In this research, neither knowledge sharing capability nor knowledge sharing success items are found to be correlated highly with different components respectively. While some interpretable organisational cultural values stand alone, their items are found to be correlated with the component in which they have been included. Therefore, following validity and reliability testing, the variables for knowledge sharing success, knowledge sharing capability and organisational culture were adjusted, and were utilised for further exploration of these factors scores, and both correlation and regression analyses to test relationships inherent in the conceptual framework.

5.3.3 Analysis of Variance (ANOVA)

ANOVA was conducted to examine the impact of subgroups of employees on the level of knowledge sharing capability, organisational culture, and knowledge sharing success. Two groups of employees are identified, namely those in managerial positions and those in non-managerial positions. These differences are carefully examined and identified through the demographic information of their position in the organisation, given by each respondent at the beginning of the questionnaire. No significant differences were found between these two subgroups suggesting that further analysis does not distinguish the respondents either by their companies or subgroups of employees**.** Table 5.9 summarise these findings.

Table 5.9

One-way ANOVA of factor scores by management status

Variables	F-ratio	Mean		Sig. value
		Management	Non-management	
Organisational culture				
• Formal collaboration	0.236	25.97	26.26	0.627
• Trustworthiness	2.513	12.82	13.66	0.114
• Expertise	0.000	9.80	9.80	0.998
• Independence	1.068	15.79	.15.37	0.302
Knowledge sharing capability	0.076	27.51	27.65	0.783
Knowledge sharing success	0.105	73.60	73.13	0.746

5.4 RELATIONSHIP TESTING

Pearson product-moment correlation coefficients were computed to determine the relationships between variables presented in the research framework. Section 5.4.1 will explain the relationship between knowledge sharing capability and knowledge sharing success. Section 5.4.2 describes the findings on the relationship between perceptions of organisational culture (perceived values of formal collaboration, trustworthiness, expertise, and

independence) and perceived level knowledge sharing capability. Section 5.4.3 demonstrates the relationship between organisational culture and knowledge sharing success. Finally, section 5.4.4 and 5.4.5 describe the findings on the mediation and moderation effects of organisational culture in the casual relationship between perceptions of knowledge sharing capability and knowledge sharing success.

5.4.1 The Relationships between Knowledge Sharing Capability and Knowledge Sharing Success

There is a significant and positive correlation between the respondents' factor scores for knowledge sharing capability and for knowledge sharing success. A moderate relationship is indicated between competency and knowledge sharing success, (r = 0.496, n = 257, ρ < 0.000), with higher levels of knowledge sharing capability associated with higher knowledge sharing success. The positive and significant coefficients of knowledge sharing capability for knowledge sharing success suggest that the more employees possess capability to share knowledge, the higher knowledge sharing success will be. Figures 5.2 is the scatterplot of this resultant correlation.

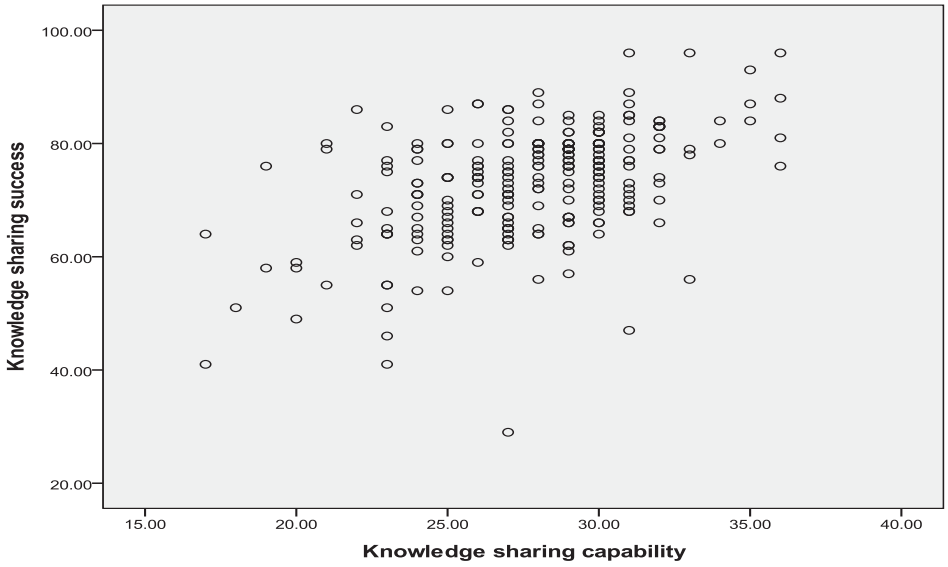


Figure 5.2. Correlation of knowledge sharing capability and knowledge sharing success

5.4.2 The Relationships between Knowledge Sharing Capability and Organisational Culture

Perceived cultural value of formal collaboration is found to be significant and positive for knowledge sharing capability. A strong relationship was found between the factor score for formal collaboration and knowledge sharing capability, (r = 0.532, n = 269, ρ < 0.000). Figure 5.3 shows that the scores were concentrated in the centre and clustered around a straight line, suggesting a strong linear relationship between formal collaboration and knowledge sharing capability.

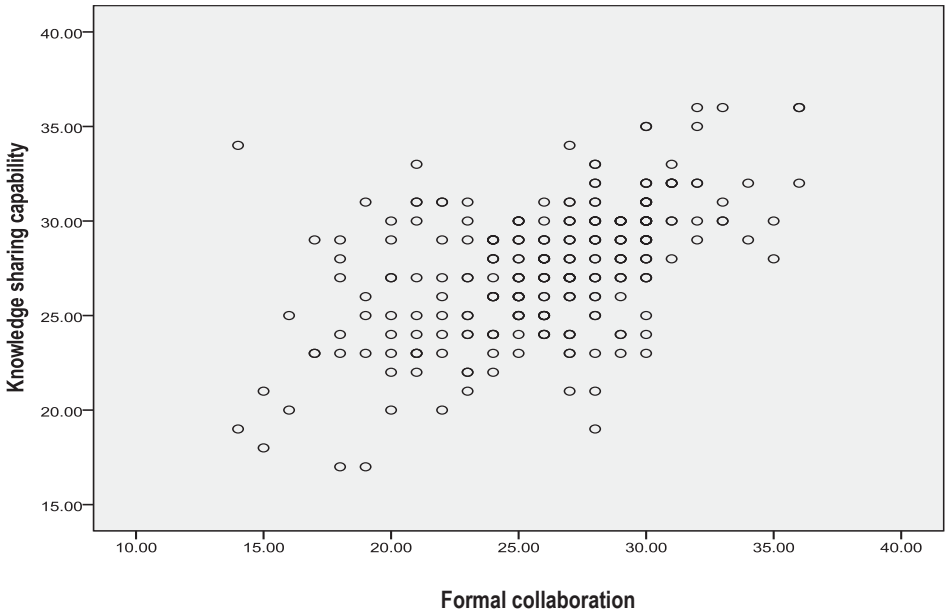


Figure 5.3. Correlation of formal collaboration and knowledge sharing capability

The perceived value of trustworthiness is significant but negatively associated with knowledge sharing capability. A small relationship was found between the factor score for trustworthiness and knowledge sharing capability (r = -0.138, n = 270, ρ < 0.023), with higher levels of trustworthiness associated with lower levels of knowledge sharing capability. Figure 5.4 shows that the scores were randomly scattered. This is indicative of a weak relationship between those two variables. The line starts high on

the left and moves down on the right, indicating an inverse relationship between trustworthiness and knowledge sharing capability.

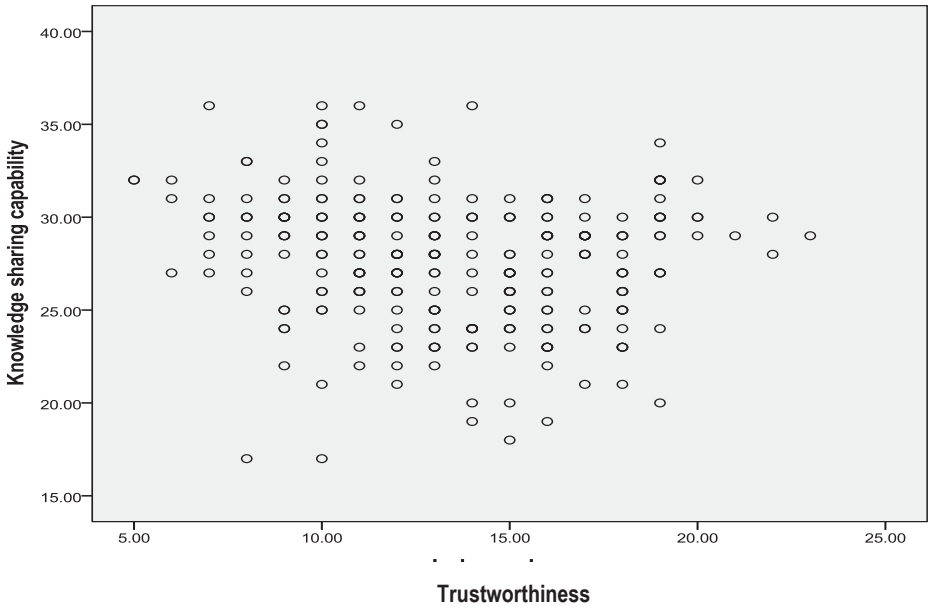


Figure 5.4. Correlation of trustworthiness and knowledge sharing capability

Although there is a significant positive relationship between the factor score for expertise and knowledge sharing capability, the strength of this correlation is moderate (r = 0.362, n = 270, ρ < 0.000). Figure 5.5 shows the scatterplot of the resultant correlation.

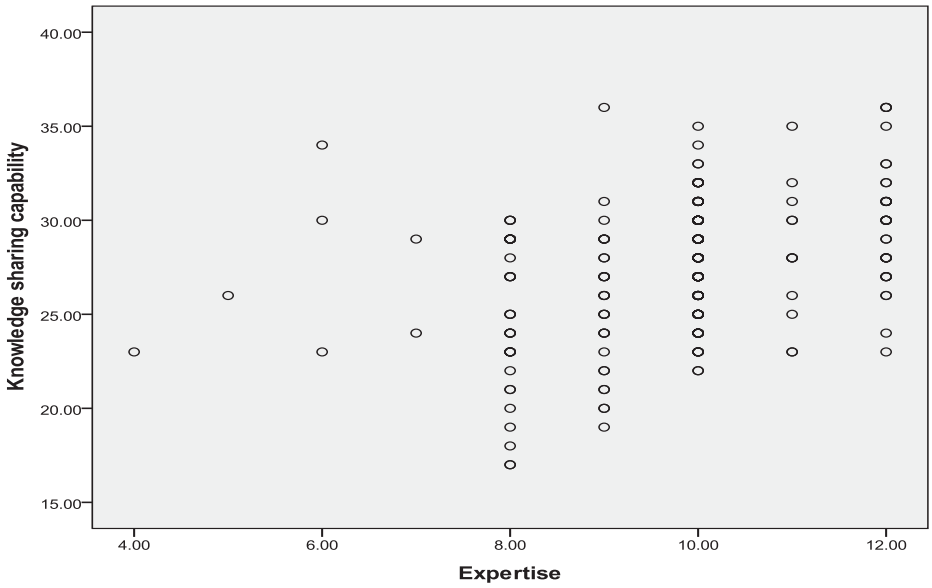


Figure 5.5. Correlation of expertise and knowledge sharing capability

Independence yields a significant and positive relationship with knowledge sharing capability. A small relationship was indicated between the factor score for independence and knowledge sharing capability (r = 0.290, n = 270, ρ < 0.000), with higher levels of independence associated with higher levels of knowledge sharing capability. Figure 5.6 shows the resultant correlation.

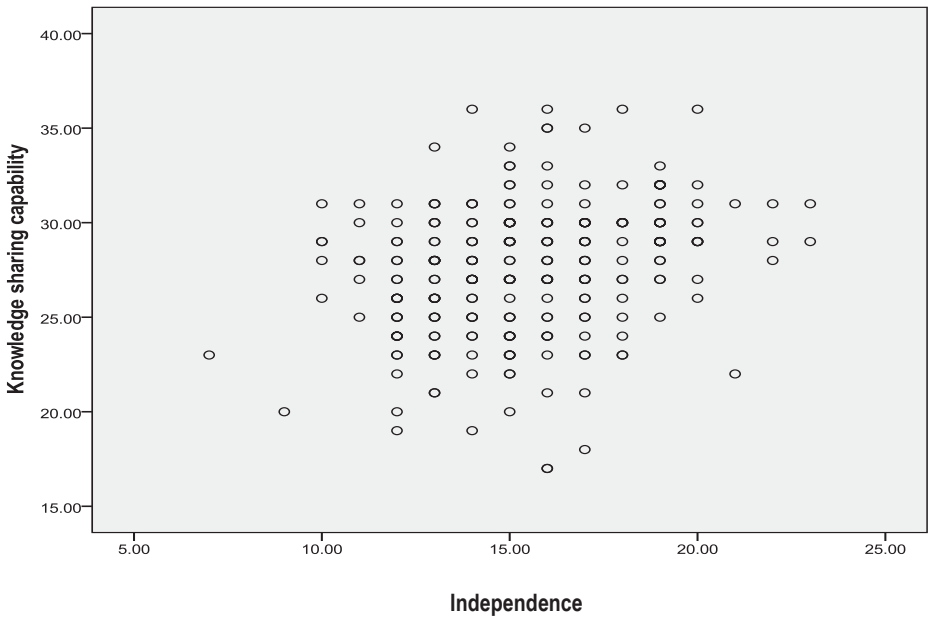


Figure 5.6. Correlation of independence and knowledge sharing capability

These results suggest that the more acceptable and desirable the perceived organisational culture is, the greater the perceived level of employees' knowledge sharing capability will be. While a strong correlation is found between formal collaboration and knowledge sharing capability, the relationship among independence and trustworthiness were not too strong. Trustworthiness however is negatively associated with knowledge sharing capability. There is a significant but moderate correlation between the perceived cultural value of expertise and knowledge sharing capability.

5.4.3 The Relationships between Organisational Culture and Knowledge Sharing Success

The relationship between organisational culture and knowledge sharing success was examined. The results show that factor scores for all

organisational cultural values have positive and significant relationships with knowledge sharing success. A strong relationship was found between the factor score for formal collaboration and knowledge sharing success, (r = 0.544, n = 256, ρ < 0.000). While a small correlation was found between knowledge sharing success and perceived cultural value of trustworthiness, (r = 0.173, n = 257, ρ < 0.006), the relationship between knowledge sharing success with the cultural value of expertise is only moderate, (r = 0.373, n = 257, ρ < 0.000). The results suggest that organisational culture in terms of the perceived values of formal collaboration, trustworthiness, and expertise has a positive and significant relationship with knowledge sharing success. These results demonstrate that the more acceptable and desirable the perceived organisational culture is, the higher is the perceived knowledge sharing success. These findings indicate that organisations may achieve a higher perceived level of knowledge sharing success, if they provide employees with more opportunities for formal collaboration in knowledge management activities, encourages expertise, and create trustworthy environments. Table 5.7 to 5.9 show the scatterplots of these resultant correlations.

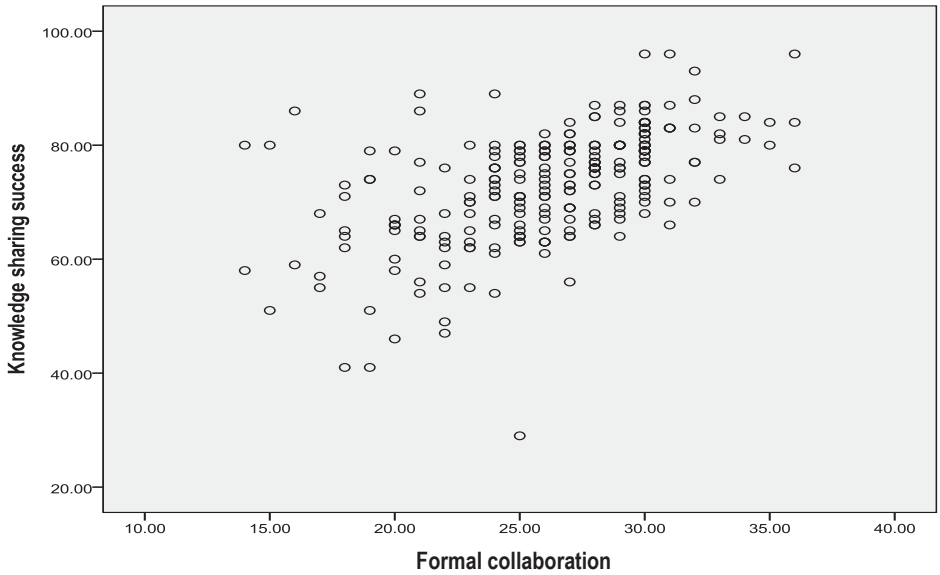


Figure 5.7. Correlation of formal collaboration and knowledge sharing success

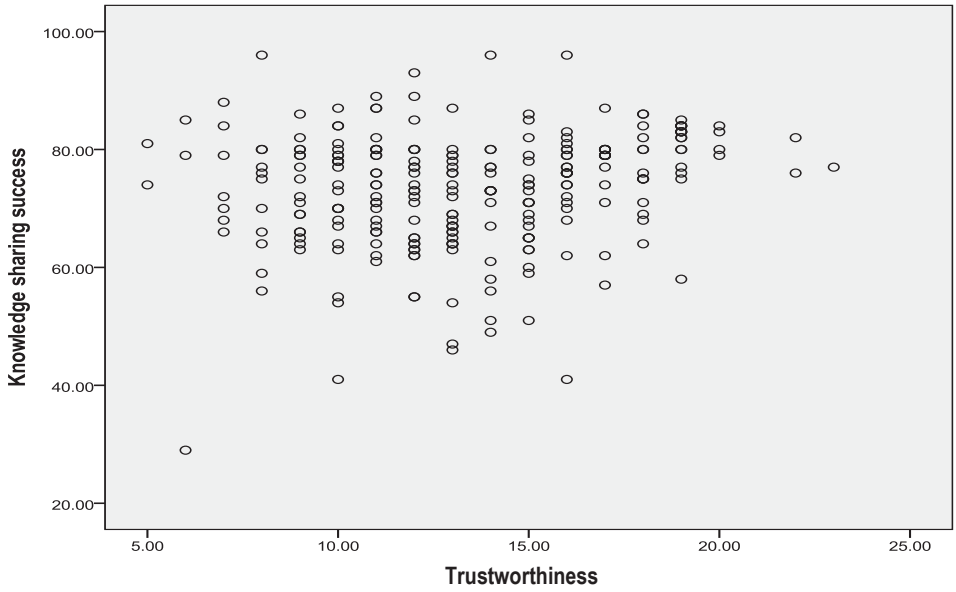


Figure 5.8. Correlation of trustworthiness and knowledge sharing success

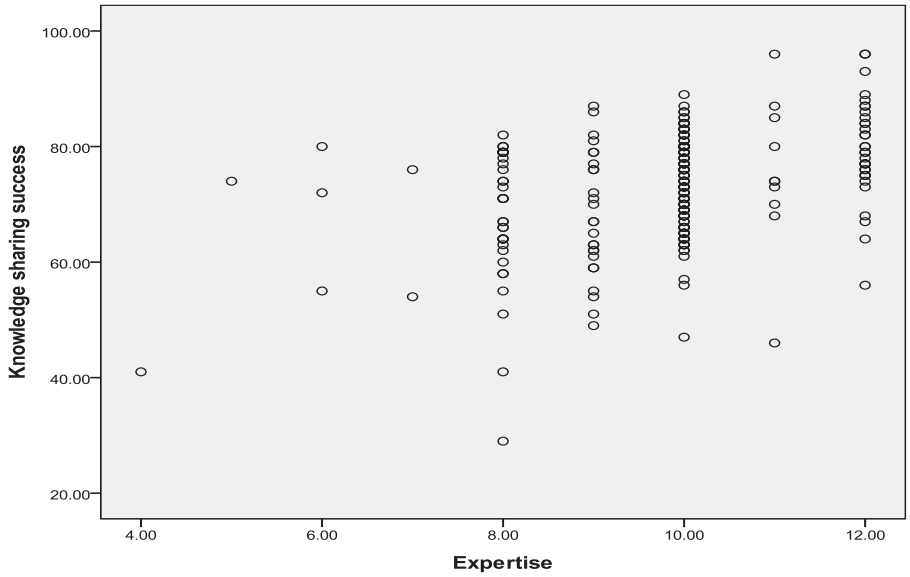


Figure 5.9. Correlation of expertise and knowledge sharing success

The findings also reveal that formal collaboration (r = 0.544) is the respondents' most desirable (preferred) value for successful knowledge sharing, followed by expertise (r = 0.373), and trustworthiness (r = 0.173). Despite reaching statistical significance, the actual differences between these values are quite small. The r value for trustworthiness is slightly lower than those for formal collaboration, expertise, and independence. This suggests

that trustworthiness makes a smaller contribution to the success of knowledge sharing. Therefore, the results suggest that the perceived organisational culture of formal collaboration, expertise, and trustworthiness are the respondents' preferred (favourable) values in order to achieve a higher level of knowledge sharing success in the Malaysian-owned IT organisations, that employ more than 100 employees and are responsible for providing IT solutions to government agencies.

The preceding findings link the relationships among perceptions of knowledge sharing capability, organisational culture and knowledge sharing success. Implicitly, the results provide evidence to further investigate the role that organisational culture could play in the causal relationship between knowledge sharing capability and knowledge sharing success. Therefore the conceptual framework was modified to investigate both the mediation and moderation effects of organisational culture on the relationship between knowledge sharing capability and knowledge sharing success. The implications of these testing and the resultant conclusions are discussed in more detail in Chapter 6. The following section will explain both testing in more detail.

5.4.4 Mediating role of organisational culture

According to Baron and Kenny (1986), the model in Figure 5.10 assumes a three-variable system such that there are two causal paths feeding into the outcome variable: the direct impact of the independent variable (Path *c*) and the impact of the mediating variable (Path *b*). There is also a path from the independent variable to the mediating variable (Path *a*). If the coefficient (β-value) in the multiple regression analysis is greater for Path *b* than Path *c*, then this indicates that more of the resultant change in the dependent is explained by the mediating variable than by independent variable.

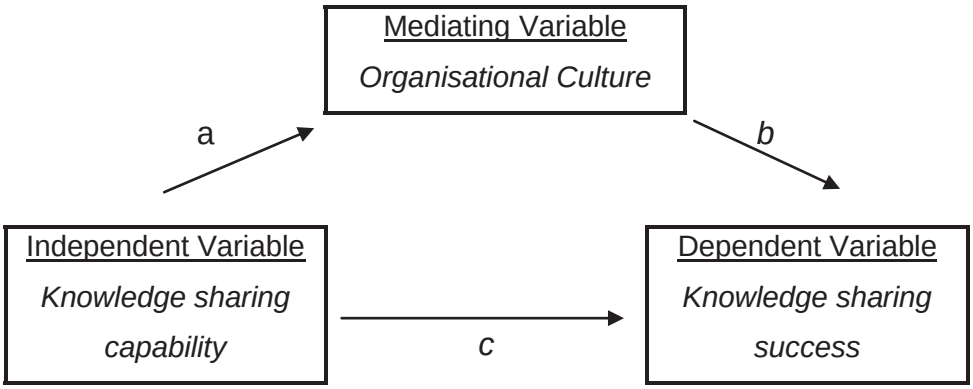


Figure 5.10. The path diagram model (Adapted from Baron and Kenny, 1986, p. 1176)

On the other hand, should the independent variable coefficient for Path *c* be greater than the mediating variable coefficient for Path *b*, then the direct Path *c* explains more of the resultant change in the dependent variable than the indirect Path *b*. When both Path *a*and *b* are controlled, a previously significant relationship between the independent and dependent variables is no longer significant. Where the coefficient for Path *c* is reduced to zero, perfect mediation is evident. A multiple or partial mediating effect can be concluded where the coefficient for Path *b* is greater than the coefficient for Path *c.*

5.4.4.1 Mediating Testing

The effects of the mediating variable on the relationship between the independent and dependent variables were tested using Baron and Kenny's (1986) procedure and further developed by Chen and Huang (2009). This procedure involves first regressing the dependent variable (step 1) and then the mediating variable (step 2) on the independent variables, followed by a third step (step 3) where the dependent variable is regressed on the mediating variable. Finally, the procedure involves regressing the dependent variable on both the mediating and independent variables to examine whether the mediating variable reduces the effects of the independent variables to non-significance.

The organisational entity may influence the perceived level of knowledge sharing success because different organisations may exhibit different organisational cultural values and resource deployment. Therefore, a control variable (i.e. organisation) was also included as a predictor in the regression analyses to measure the potential effects.

Step 1 demonstrates whether the independent variables have a significant relationship with the dependent variable and, then in step 2, with the mediating variable. Similarly, step 3 explains whether the mediating variable's relationship with the dependent variable has a significant mediating effect. Mediation, where the impact of the mediating variable explains some or all of the independent variable's effect on the dependent variable, cannot be present if either of these relationships are not significant. Thus, to test for a mediating effect, it must first be established that all paths are significant (Baron & Kenny, 1986; Chen & Huang, 2009; King & Marks Jr., 2008). Table 5.10 to 5.14 summarise these findings.

Table 5.10
Regression Analysis – Knowledge sharing success on control, independent and mediator variables

Variables	β	Std. Error	Std. β	t	ρ
Organisation	0.503	0.571	0.059	0.945	0.346
Organisation	0.083	0.057	0.092	1.448	0.149
Knowledge sharing capability	1.424	0.154	0.502	9.237	0.000
Organisation	0.078	0.057	0.081	1.361	0.175
Formal collaboration	1.053	0.139	0.460	7.567	0.000
Trustworthiness	0.457	0.137	0.170	3.330	0.001
Expertise	1.175	0.428	0.157	2.743	0.007
Independence	0.248	0.195	0.069	1.272	0.204

Table 5.11
Regression Analysis – Organisational culture (Formal collaboration) on control and independent variable

Variables	β	Std. Error	Std. β	t	ρ
Organisation	-0.369	0.204	-0.093	-1.805	0.072
Knowledge sharing capability	0.645	0.063	0.529	10.237	0.000

Table 5.12
Regression Analysis – Organisational culture (Trustworthiness) on control and independent variable

Variables	β	Std. Error	Std. β	t	ρ
Organisation	0.270	0.209	0.078	1.296	0.196
Knowledge sharing capability	-0.145	0.064	-0.136	-2.245	0.026

Table 5.13
Regression Analysis – Organisational culture (Expertise) on control and independent variable

Variables	β	Std. Error	Std. β	t	ρ
Organisation	0.106	0.070	0.087	1.523	0.129
Knowledge sharing capability	0.138	0.021	0.364	6.411	0.000

Table 5.14
Regression Analysis – Organisational culture (Independence) on control and Independent variable

Variables	β	Std. Error	Std. β	t	ρ
Organisation	-0.182	0.152	-0.070	-1.200	0.231
Knowledge sharing capability	0.231	0.047	0.053	4.929	0.138

Step 4 combines these regressions to identify whether the impact of the independent variable on the dependent variable (perceptions of knowledge sharing success) remains significant in the presence of the mediator variable (perceived level of organisational culture) and can therefore be attributed (partially or fully) to its mediating effect. Table 5.15 summarises these findings.

Table 5.15
Regression Analysis – Knowledge sharing success on control, independent and mediator variables

Variables	β	Std. Error	Std. β	t	ρ
Organisation	0.080	0.056	0.084	1.418	0.157
Knowledge sharing capability	0.059	0.021	0.047	2.844	0.364
Formal collaboration	0.761	0.018	0.448	2.217	0.028
Trustworthiness	0.052	0.016	0.167	3.129	0.002
Expertise	0.047	0.052	0.156	0.909	0.048
Independence	0.036	0.023	0.070	1.571	0.118

To summarise, a variable is considered a significant mediator when the following conditions are met:

- The independent variable is significantly related to the dependent variable in the step 1;
- The independent variable is significantly related to the mediating variable in the step 2;
- The mediating variable is significantly related to the dependent variable in the step 3; and
- The β-value of the independent variable on the dependent variable is less in the step 4 than in the step 1.

No mediation is evident when the mediator variable does not have a significant effect on the dependent variable (step 3) or when there is an absence of significant relationships between the independent variable (knowledge sharing capability) and the mediating variable, (organisation culture) (step 2). Partial mediation is evident when independent variables have a significant effect on both mediating (organisation culture) and dependent variables (knowledge sharing success) in steps 1 and 4, which demonstrates that the β-value of the independent variable on the dependent variable is lesser in step 4 than in step 1. Perfect or dominant mediation occurs when the independent variable (knowledge sharing capability) has a significant effect on the mediating variable (organisation culture) in step 2, but not on the dependent variable (knowledge sharing success) in step 4.

In this study, as model 2 of Table 5.16 shows, perception of knowledge sharing capability has a positive impact on knowledge sharing success. To test the second condition, the results in Table 5.11 of models 6a to 6c demonstrate that perceptions of knowledge sharing capability have significant effects on perceived organisational cultural values of collaboration, independence and expertise. As Model 3 of Table 5.10 shows, the mediator, perceived organisational cultural values of formal collaboration, trustworthiness, and expertise have significant and positive effects on knowledge sharing success, indicating the direct effect of organisational culture on knowledge sharing success. Further, results show that the

perceived organisational cultural values of formal collaboration, trustworthiness, and expertise significantly reduce the effects of perceptions of knowledge sharing capability on the outcome variable, knowledge sharing success to being non-significant, which is indicative of perfect mediation effects. The inclusion of the mediating variable also causes an increase in the proportion of variance explained (R^2 = 0.254 to R^2 = 0.361). These findings suggest that the inclusion of organisational culture variables attenuates the relationships between perceptions of knowledge sharing capability and knowledge sharing success. This is evidence that organisational culture (i.e. the perceived values of formal collaboration, trustworthiness, and expertise) plays a mediating role between the perceptions of knowledge sharing capability and knowledge sharing success.

Table 5.16
Results of regression analyses of knowledge sharing success (Mediation)

Variables	Knowledge Sharing Success (KSS)			
	Model 1	Model 2	Model 3	Model 4
Control variable				
Organisation	0.059	0.092	0.093	0.084
Knowledge sharing capability		0.502*		0.047
Organisational culture				
Formal collaboration			0.460*	0.448*
Trustworthiness			0.170*	0.167*
Expertise			0.157*	0.156*
Independence			0.069	0.070
R^2	0.003	0.254	0.360	0.361
F	0.893	43.253	28.068	29.588

Table 5.17
Results of regression analyses of organisation culture

Variables	Organisational culture							
	Formal collaboration		Trustworthiness		Expertise		Independence	
	Model 5a	Model 6a	Model 5b	Model 6b	Model 5c	Model 6c	Model 5d	Model 6d
Control variable								
Organisation	-0.111	-0.093	0.083	0.078	0.075	0.087	-0.080	-0.115
Independent variable								
Knowledge sharing capability		0.529*		-0.136*		0.364*		0.053
R^2	0.012	0.291	0.007	0.025	0.006	0.138	0.006	0.017
F	3.301	54.688	1.850	3.460	1.499	21.411	1.708	2.153

To summarise, all conditions were met for demonstrating that perceived organisational cultural values of formal collaboration, trustworthiness and expertise perfectly mediated the link between perceptions of knowledge sharing capability and knowledge sharing success. However, no mediation by knowledge sharing capability was present with respect to perceived cultural value of independence.

5.4.5 Moderating role of organisational culture

The resultant conceptual framework may also serve as a basis of inquiry in confirming organisational culture as a moderating variable in the causal relationship between perceptions of knowledge sharing capability and knowledge sharing success. As depicted in figure 5.11, the model has three causal paths that feed into the outcome variable of knowledge sharing success: the impact of the knowledge sharing capability as a predictor (Path A), the impact of organisational culture as a moderator (Path B), and the interaction of knowledge sharing capability and organisational culture (Path C).

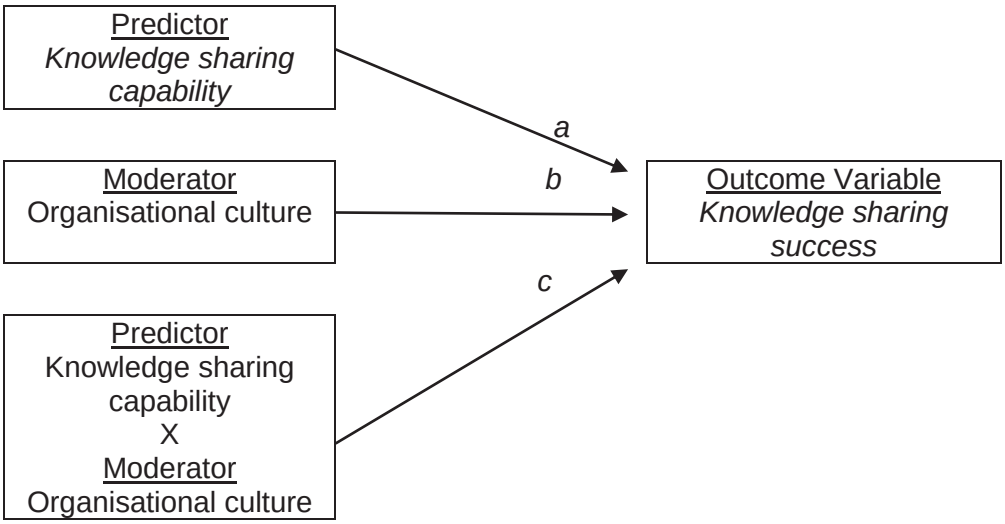


Figure 5.11. The moderating diagram model (Adapted from Baron and Kenny, 1986, p. 1174)

Baron and Kenny (1986) suggest that, the moderator effect is evident if the interaction (Path C) is significant. However, significant main effects for Paths A and B are not conceptually relevant for testing the moderation effect. A distinction needs to be made between mediator and moderator predictor variables. In the relationship between mediator and predictor (mediation role), the predictor variable is causually antecedent to the mediator. In explaining the role of moderator in the causal relationships between two variables, Baron and Kenny (1986, p. 1174) suggest that:

> "…..moderators and predictors are at the same level in regard to their role as casual variables antecedent or exogenous to certain criterion effects. That is, moderator variables always function as independent variables, whereas mediating events shift roles from effects to causes, depending on the focus of analysis. Within this framework, moderation implies that the casual relation between two variables changes as a function of the moderator variable" (p. 1174)

5.4.5.1 Moderation Testing

Moderation effects of the moderator variable on the relationship between the independent and dependent variables were tested using Baron and Kenny's (1986) procedure. Interaction terms were created by standardizing the independent variables (perceptions of knowledge sharing capability and perceived cultural values of formal collaboration, trustworthiness, expertise and independence) and multiplying them together. This procedure involves first regressing the predictor variable on the outcome variable (step 1 - perceptions of knowledge sharing capability – see Table 5.10), and then the moderator variable (step 2 – perceptions of organisational culture – see Table 5.10) and followed by a third step (step 3) where the interaction variables are also regressed on the outcome variable (perceptions of knowledge sharing success – see Table 5.18).

Table 5.18

Regression analysis – Knowledge sharing success on control and interaction variables

Variables	β	Std. Error	Std. β	t	ρ
Organisation	0.061	0.061	0.076	1.003	0.317
KSC * Formal collaboration	-0.006	0.016	-0.084	0.362	0.718
KSC * Trustworthiness	-0.005	0.015	-0.021	0.300	0.764
KSC * Expertise	-0.048	0.047	-0.108	-1.033	0.303
KSC * Independence	0.018	0.023	0.393	0.775	0.439

Finally, the procedure combined these regressions to examine the role of perceived organisational culture as a moderator by assessing the interaction of perceptions of knowledge sharing capability and perceived organisational culture as a predictor of knowledge sharing success. Table 5.19 summarises these findings.

Table 5.19

Regression analysis – Knowledge sharing success on control, predictor, moderator and interaction variables

Variables	β	Std. Error	Std. β	t	ρ
Control variable					
Organisation	0.035	0.048	0.037	0.738	0.461
Predictor variable					
Knowledge sharing capability	0.422	0.040	1.360	10.461	0.000
Moderator variables					
Formal collaboration	-0.030	0.017	-0.085	-1.779	0.076
Trustworthiness	0.075	0.015	0.314	5.113	0.000
Expertise	-0.029	0.044	0.056	-0.647	0.519
Independence	-0.013	0.020	-0.115	-0.626	0.045
Interaction variables					
KSC * Formal collaboration	0.020	0.012	0.305	1.636	0.103
KSC * Trustworthiness	-0.018	0.012	-0.199	-1.433	0.153
KSC * Expertise	0.096	0.036	0.618	2.664	0.008
KSC * Independence	-0.035	0.018	-0.494	-0.528	0.050

In this study, as indicated in Table 5.20, after accounting for the effects of the control variable (i.e. organisation), a main effect was found significant for perceptions of knowledge sharing capability ($\beta = 1.360$, $\rho < 0.000$). This suggests that high levels of employees' capability are associated with higher knowledge sharing success. However, as model 5 of Table 5.20 shows, a significant interaction effect was found, indicating that the perceived cultural values of expertise ($\beta = 0.618$, $\rho < 0.008$) and independence ($\beta = -0.494$, $\rho < 0.05$) did moderate the link between perceptions of knowledge sharing capability and knowledge sharing success. No moderation by the perceived cultural values of formal collaboration and trustworthiness were found in the relationship between perceptions of knowledge sharing capability and knowledge sharing success. This suggests that nourishing the cultural values of expertise within formal working environment improves employees' capability to share for successful knowledge sharing.

Table 5.20

Results of regression analyses of knowledge sharing success (moderation)

Variables	Knowledge sharing success				
	Model 1	Model 2	Model 3	Model 4	Model 5
Control variable					
Organisation	0.059	0.092	0.093	0.076	0.002
Knowledge sharing capability (KSC)		0.502*			1.360*
Organisational culture					
Formal collaboration			0.460*		0.085
Trustworthiness			0.170*		0.314*
Expertise			0.157*		0.056
Independence			0.069		-0.115*
KSC * Formal collaboration				-0.084	0.305
KSC * Trustworthiness				-0.021	-0.199
KSC * Expertise				-0.108	0.618*
KSC * Independence				0.393	-0.494*
R^2	0.003	0.254	0.360	0.040	0.593
F	0.893	43.253	28.068	2.042	35.445

5.5 CHAPTER CONCLUSION

This Chapter discussed data analysis strategies and procedures and has presented the findings obtained in relation to the four research questions. The statistical findings have been summarised around the previously described research questions.

Based on these results, the proposed relationships are supported. It is important to emphasise that no interpretation and implications are presented in this chapter. Comparisons and contrasts of the findings with the literature presented in chapter 2 will be addressed in the discussion chapter (chapter 6). Consideration will be given to the implications of the findings for organisations intending to improve or gain better knowledge sharing success.

CHAPTER 6: DISCUSSION

6.1 INTRODUCTION

In this chapter, the major findings of the research, drawn from descriptive statistics and multivariate exploratory analysis, are interpreted and discussed. In this research, a Malaysian sample was chosen to examine the proposed relationships, and these were relationships among knowledge sharing capability, organisational culture and knowledge sharing success. Factor analyses were carried to identify the dimensionality of the constructs and followed by Pearson's correlation and multiple regression analyses to determine the strengths of any relationships. The discussion is structured around the outcomes relating to each of the research questions and previous published findings. The limitations of this research and its implications, along with the suggestions for future research, are then described. The chapter concludes with a summary of the discussion and key findings.

Human resources' capabilities to share knowledge are a crucial part in explaining how organisational knowledge management activities achieve outcomes, in particular, knowledge sharing success (Andrawina et al., 2008; Kim & Lee, 2006; Oltra, 2005). Subsequently, exhibiting a favourable sharing culture is proposed to facilitate leveraging knowledge within organisation. Knowledge sharing success can translate into how the knowledge receiver is satisfied with, committed to, and has a sense of ownership of internalised and shared knowledge. More detailed discussion on these findings is presented in the next section.

6.2 IS THERE ANY RELATIONSHIP BETWEEN KNOWLEDGE SHARING CAPABILITY AND KNOWLEDGE SHARING SUCCESS?

This research question sought to demonstrate the importance of employees' capabilities to share knowledge in achieving knowledge sharing outcomes.

The perceived level of knowledge sharing capability examined in this research question relates to the ability, motivation and opportunity of an employee to share knowledge. Testing of data confirms that the perceived level of knowledge sharing capability has a significant and positive relationship with perceptions of knowledge sharing success. Findings from this research question, therefore, provide evidence that employees' capabilities to share knowledge are an important aspect of knowledge sharing success. These results are consistent with Andrawina et al.'s (2008) findings and suggest that increasing employees' capabilities is associated with increasing knowledge sharing success. The results from this research question adds to the current literature by suggesting that the contribution of human attributes is significant in explaining perceptions of knowledge sharing success, which researchers suggest are an important element for countering the assumption that the "technical nature" of knowledge management is best solved by introducing efficient and sophisticated information systems (Hendricks, 1999; Hislop, 2002; 2003; Zarrage & Bonache, 2005).

These results empirically support Kelloway and Barling's (2000) suggestions on the importance of employees' ability, motivation, and for opportunity to be present for the achievement of knowledge management outcomes. The current findings also support Siemsen et al.'s (2008) suggestion that ability, motivation, and opportunity variables should not be treated independently, but in a dynamic and systematic manner. The importance of ability, motivation, and opportunity to the knowledge management outcomes in this research is also supported by empirical research by Minbaeva et al. (2010). The findings of this research question also add to the current literature by suggesting that HRM practices of job rotation, and, training and development can create employees' opportunities to share knowledge. This expands the enabling or facilitation mechanisms of knowledge sharing, so far as knowledge sharing success concern, in explaining the behaviour of human beings to knowledge share.

This study's results on the relationship between perceived levels of knowledge sharing capability and perceptions of knowledge sharing success

are also consistent with a significant body of HRM literature, which strongly supports the link between employees' capabilities and the achievement of organisational outcomes (Hislop, 2002, 2003; Mayo, 2000; McCown, Bowen, Huselid, & Becker, 1999). In particular, Mayo (2000) highlights that in assessing the "concept of value", it is the intangible assets of an organisation that are likely to be worth considerably more than measured tangible ones. This view suggests that people (HR) form a critical part of intangible assets and are the ultimate driver of all value growth. They contribute to the achievement of organisational outcomes through individual capability, individual motivation, high quality of leadership, supportive organisational climates, and an effective workgroups. Thus, organisational value growth is achieved through employee development, including the continuing generation and exchange of knowledge and expertise. In short, one of the key conditions for organisational value growth is individual capability, which emphasises employees' capacities to adapt and grow with the changing circumstances through the exchange of knowledge and experience that can further add value to organisational competitiveness.

The findings indicate the importance of human resources for KM initiatives and empirically confirm the claim made by HRM scholars that the "factor" with the greatest potential to increase knowledge sharing success is the people, rather than KM systems. For example, Yahya and Goh (2002) suggest that people are at the heart of KM philosophy and that successful knowledge sharing lies, to a great extent, in the human resources' capabilities to share knowledge. The importance to develop, organise, and utilise, (in addition to having a good capacity to retain employees' capabilities), as Martensson (2000) suggests is, therefore, crucial for organisational sustainable competitive advantage. This is because both tacit and explicit components of knowledge are mutually constituted and inseparable (Hislop, 2002). The author states that:

> ".....all knowledge (whether in the form of highly tacit skills or partially explicit knowledge) is deeply embodied, is embedded in the practices and activities that people

> undertake, is subjective in character, is to some extent socially constructed and is embedded in the social values and cultural contexts of those who develop and use it" (p.174).

Hislop's view emphasises the importance of people for KM initiatives. The results from this research question, therefore, adds further support to the literature, as well as addressing the negative impact of the lack of employees' capabilities on the success of knowledge sharing, which can lead to an inability of the organisation to remain competitive. Avoiding a lack of employee knowledge sharing capability, therefore, appears to be an essential element for successful knowledge sharing.

Previous research, such as that undertaken by Minbaeva (2008), Minbaeva et al. (2010), Siemsen et al. (2008), Reus (2004), and Kelloway and Barling's (2000) theory has suggested a link between employees' capabilities that incorporates ability, motivation, and opportunity to share knowledge, and consequential knowledge sharing success. This research establishes this link through its findings.

6.3 IS THERE ANY RELATIONSHIP BETWEEN KNOWLEDGE SHARING CAPABILITY AND ORGANISATIONAL CULTURE?

The results of analyses show that there is a relationship between the perceived level of knowledge sharing capability and perceptions of organisational culture (i.e. the perceived value of formal collaboration, trustworthiness, expertise, and independence). This suggests that organisational culture is important for employees' capabilities in knowledge sharing success. The results suggest that when employees find that an organisation culture is appropriate, they report an increased capability to share knowledge. This significant relationship is consistent with the research undertaken by Kim and Lee (2006) that suggests it is crucial for both public and private organisations to establish an organisational culture that enhances

employees' knowledge sharing capabilities. The statistical findings of the present research empirically lend support to Kelloway and Barling's (2000) suggestion on the importance of creating the condition that enhances employees' ability, motivation, and opportunity for the achievement of knowledge management outcomes. The present findings add further to this literature, by showing that distinctive cultural values can support employees' knowledge sharing capability within the organisational context.

An emphasis on the importance of organisational culture to employees' knowledge sharing capability in this research also supports Wright et al.'s (2001) suggestion in bridging HRM and the RBV. These authors suggest that the interaction between the HR capital pool and organisational culture could create the required attributes for organisational competiveness. The RBV suggests that employees' capabilities to share knowledge that are deeply embedded in socially complex elements, such as organisation culture, are difficult to imitate. The difficulties in the identification of the precise mechanisms by which HR capabilities interact with the organisational cultural values create competitive advantage. It is even difficult for a competing organisation to imitate organisational culture by nourishing similar values and HR capabilities. Even hiring a few executives with reputations for achieving the expected culture does not always work, as the understanding of the acceptable values and how they interact in enhancing capabilities is spread across many people in the organisation (Hislop, 2003, Wright et al., 2001).

The findings from this research question, therefore, shed light on the significant role of HRM through its practices in nurturing an organisational culture that emphasises employees' collaboration for promoting knowledge sharing within an organisation. Using HRM to effectively coordinate and facilitate knowledge sharing, as well as fostering the culture of sharing, through the design and re-orientation of its practices has been emphasised by several researchers (Bollinger & Smith, 2001; Greengard, 1998; Roberston & Hammersley, 2000). Similarly to Lado and Wilson (1994) and De Saa-Perez and Garcia-Falcon (2002), the findings of this research question highlight the importance of HRM in developing employees'

capabilities as one of organisational key competencies for sustained competitive advantage. Thus, it is important for organisations to stress the employees' perceived acceptable organisational culture in the establishment of HRM practices to avoid negative impacts, and to facilitate knowledge sharing success.

The results may highlight the importance for an organisation to foster the value of formal collaboration for either developing or enhancing employees' knowledge sharing capabilities. Employees believe that their capability levels will increase through their involvement in activities such as team meetings or group/team decision making. Such activities promote cooperation, trust, and improve employee relations throughout the organisations. This fosters the development of new workplace relationships and competencies leading to successful knowledge sharing within organisations. Employees' participation in organisational activities supports the development of social networking, which helps the development of interpersonal connections or strong ties as Hsu et al. (2007) have suggested. In return for their expertise contributions and efforts, rewards such as job promotion or special ceremonies are anticipated. For example, the importance of participation in the development of human capabilities established by this research, is also consistent with McCown et al.'s (1999) finding in a case study exploring the Herman Miller Inc.'s (HMI) strategic HRM practices. In building employee capabilities, HMI recognises the importance of developing employee competence by building employee participation and business literacy training. HMI believes that employees' participation in decision making is a crucial ingredient in the process of facilitating "ownership' among employees. This provides the company with a potential source of competitive advantage, and heightens the quality of decision-making generally" (McCown et al., 1999, p.305).

A significant relationship between trustworthiness and employees' capability supports Colquitt, Scott and LePine's (2007) contention on the importance of ability for trust. The perceived value of trustworthiness, however, was negatively correlated with knowledge sharing capability. This is a counter-intuitive finding, because previous research has suggested that trust has a

positive relationship with the formation of relationships for successful knowledge sharing within organisation (Adler & Kwon, 2002, Cummings & Teng, 2003; Hansen, 1999). In this research the perceptions of employees' capability to share also postulated that employees might develop formal and informal networks, and strengthen weaker relationships through the use of opportunities given by the organisation. The negative relationship between trustworthiness and employees' capability to share suggests that the more people trust each other, the weaker the formation of network relationships will be. In short, a low trust working environment supports the development of strong networks and relationships. Although strong network relationships were associated with redundant information, they served as necessary interaction media for transferring complex knowledge (Hansen, 1999). On the other hand, weak employee networks could benefit organisations that are interested in accessing non-redundant and simple knowledge (Hansen, 1999; Levin & Cross, 2004).

The results from this research question indicate that a high trust work environment is significant for weak network relationships, suggesting the occurrences of sharing non-redundant and simple knowledge. This could indicate the power of knowledge as the guardian to individuals' "wealth" of status and expertise. This contradicts Morris's (2001) contention that sharing and codifying knowledge will not undermine employees' status and expertise. This perhaps indicates that the nature of Malaysians' common value of hierarchy or high power distance was clearly visible, reflecting the importance of status and respect for authority. Sharing "complex" knowledge (i.e. highly private and confidential) is detrimental to the status for which respect is earned. Thus, within a high trust Malaysian working environment context, the behaviour of sharing "complex" knowledge can result in employees losing their expertise and the status they had previously gained through job promotion or mentoring roles, as well as the title of "expert" within their communities of practice. This may account for the negative effects for trustworthiness in the development of network relationships.

A summary of the possible interactions of trustworthiness and network relationships, and how they affect employees' knowledge sharing behaviours is presented in Table 6.1. According to this typology/classification, the literature indicates trustworthiness and network relationships are positively related (see cells B and C). While employees in cell B are interested to share complex but redundant knowledge, the knowledge shared among employees in cell C are categorized as simple but non-redundant.

Table 6.1

Knowledge Sharing Behaviours of IT Employees: Trustworthiness and Network Relationships

Trustworthiness		
	A High trustworthiness Low network relationships	**B** High trustworthiness High network relationships
	C Low trustworthiness Low network relationships	**D** Low trustworthiness High network relationships
		Network relationships
	Types of knowledge shared	
	Simple but Non-redundant	Complex but redundant

The findings of the present research, however, suggest that:

i) A high trust work environment is associated with the development of weak network relationships. This is important for organisations interested in encouraging simple and non-redundant knowledge sharing among employees (see cell A); and

ii) A low trust work environment that encourages the development of strong network relationships is important for organisations interested to encourage complex but redundant knowledge sharing among employees (see cell D).

These findings therefore, may add to the current literature, as well as offering organisations operating in Malaysia two options for optimising employees' interaction opportunities in the development of new network relationships. Confirming or refuting these relationships requires further empirical evidence.

The results support previous research by suggesting the importance of expertise and independence for knowledge sharing capability (Alavi et al., 2005; Hsu et al., 2007; Roberston & Hammersley, 2000). In particular, the results clearly suggest that employees' capability will be enhanced and improved if organisations accord their employees more job autonomy and acknowledge their expertise. Organisations may increase their employees' knowledge sharing bandwidth by encouraging employees' participation in organisational activities for expertise sharing, and award them more independence to choose their own contacts. In other words, giving employees the freedom to choose whom they wish to make contact with, or get to know well, will subsequently improve work collaboration, employee relations, and trustworthiness throughout an organisation.

As with the discussion of previous relationships, the negative significance of the relationship between trustworthiness and knowledge sharing capability was contrary to expectation. It was deemed logical that an environment with high trust would support knowledge sharing success and extend opportunities for knowledge sharing. However, this finding has suggested that, in Malaysia, people with close relationships or friendships may not necessarily increase sharing knowledge in the workplace. The testing of the relationship between knowledge sharing capability and organisational culture confirmed the significance of organisational culture for employees' capabilities. These results suggest that fostering the cultural values of formal collaboration, trustworthiness, expertise, and independence is significant for

employees' capability to share knowledge, even in an environment where trust is not perceived as a highly needed value. These empirical findings then further add to the literature by specifying distinctive perceived cultural values that may have influence on employees' capabilities to knowledge share.

6.4 IS THERE ANY RELATIONSHIP BETWEEN ORGANISATIONAL CULTURE AND KNOWLEDGE SHARING SUCCESS?

The results show the importance of organisational culture for successful knowledge sharing within an organisational context. Support for this relationship is consistent with the previous research that suggests a significant influence of organisational culture on knowledge sharing outcomes (Alavi et al., 2005; Al-Alawi et al., 2007; Cummings & Teng, 2003; Lee & Choi, 2005; Nayir & Uzuncarsili, 2008; Ruppel & Harrington, 2001). Accordingly, the present research suggests that increasing acceptability and desirability for organisational culture is associated with increasing knowledge sharing success. Such a conclusion is consistent with Cummings and Teng's (2003) findings with respect to R&D knowledge transfer success. The findings of this research question support the claim made by several researchers on the importance of a knowledge-friendly culture for positive knowledge sharing outcomes (Alavi et al., 2005; Al-Alawi et al., 2007; Greengard, 1998; Lee & Choi, 2003; McDermott & O'Dell, 2001; Nayir & Uzuncarsili, 2008; O'Dell & Grayson, 1998; Sveiby & Simons, 2002). The results may add to the current literature by suggesting that a knowledge-friendly culture was symbolised through the perceived cultural values of formal collaboration, trustworthiness, and expertise.

From the discretionary behavioural theoretical stance, the significant and positive relationships between organisational culture and knowledge sharing success further explain employees' knowledge sharing behaviour. According to Wright et al. (2001), discretionary behaviour explains employees' decisions on whether or not to contribute for the achievement of organisational competitive advantage, and depends on their willingness to either individually

or collectively engage in behaviours that benefit organisations. Zarraga and Bonache's (2005) research on the impact of team atmosphere on knowledge outcomes provides evidence that a desirable and favourable atmosphere (i.e. active empathy and lenience in judgement, courage, mutual trust, and access to help) within the groups, motivates employees to share knowledge. The present results also support the findings from the previous research that demonstrated a significant link between organisational culture and human knowledge sharing behaviour (De Long & Fahey, 2000; McDermont & O'Dell, 2001; Greengard, 1998; Zarraga & Bonache, 2005). In particular, this research suggests that individuals' decisions about whether or not to contribute their know-how and expertise are associated with their work environment. The findings of this research question can extend the previous literature by revealing that employees' knowledge sharing behaviours is most significant when organisations foster the values of formal collaboration, trustworthiness, and expertise.

A somewhat unexpected and counter-intuitive finding was found in relation to the perceived value of independence. The perceived value of independence examined in this research related to employees' openness, non-conformity, and risk taking related to sharing knowledge in the organisation. The results suggest that the perceived value of independence is unimportant in explaining knowledge sharing outcomes. However, previous research suggests this is not always the case (Alavi et al., 2005; Cabrera et al., 2006; Janz & Prasarnphanich, 2003, Robertson & Hammersley, 2000). Cabrera et al. (2006) proposed that job autonomy significantly predicted self-reports of participation in knowledge sharing. The importance of autonomy in managing knowledge workers in relation to knowledge sharing activities is also highlighted by Roberston and Hammersley (2000). The clustering of organisational culture items that were later renamed as independence in the present study may indicate that Malaysians generally appreciate "autonomy" as their part of work culture. Independence was the label given to the value relating to employees' expectation to have some autonomy in assuming their roles. While this is desired, in Malaysia as in other Eastern cultures, respect

for elders and for people of higher status limits this cultural value more than in some Western organisations. This suggests that the culture-based fear of appearing to be arrogant, or disrespectful of authority, as well as a concern about the effect of individuals' actions on the feelings of others, has negative effects on knowledge sharing. This may account for the lack of support for independence. This provides an explanation as to why fostering independence for knowledge sharing within the present context of this research would not bring any of the anticipated returns. The findings of this research question add further support to this area by addressing the negative impact of a restricted autonomous culture (culture-based respect for authority) on knowledge sharing success.

Nevertheless, the findings of this research question further suggest that organisations would achieve a higher level of knowledge sharing success if they provide employees with more opportunities for formal collaboration in organisational activities. Collaboration can facilitate the development of new workplace relationships and help to minimise individuals' differences, leading to the promotion of trust and collaboration throughout the organisation (Abdul Jalal, Toulson, & Tweed, 2010). Emphasis on the importance of the perceived value of formal collaboration to knowledge sharing success in this research lends support to Yang's (2008) and Sveiby and Simons's (2002) research on the influence of collaborative culture/climate (i.e. emphasises the importance of collaboration) on the effectiveness of knowledge sharing. According to Sveiby and Simons (2002, p. 431) a collaborative climate explains "the bandwidth of the human infrastructure for knowledge sharing". These authors emphasise that regardless of how sophisticated IT systems may be, the possibilities of knowledge sharing to occur is slim, if a collaborative climate, is not created. This highlights the significant role of providing employees with opportunities for participating in such organisational activities as team meetings, decision making or training to promote trust and employee relations. The findings of this research extend earlier literature by revealing the importance of nourishing the value of formal

collaboration for promoting trust and network relations among organisational members.

The significant relationship between trustworthiness and knowledge sharing success indicates the importance of trust for knowledge sharing outcomes. This result also supports the findings from previous studies that demonstrate a direct effect of trust on knowledge sharing (Al-Alawi et al., 2007; Nayir & Uzuncarsili, 2008; Renzl, 2008; Staples & Webster, 2008). Initially, trust within this research context, related to the employees' perceptions of interpersonal trust in peers and management. Identification of a new component through factor analysis by clustering, later renamed the value as trustworthiness. This signifies the aggregation of "interpersonal trust in peers" items only.

While employees may not have faith towards their management, trust among peers, as Abrams et al. (2003) has argued, is a crucial ingredient for motivation to knowledge share. Consistent with Mooradian, Renzl and Matzler's (2006) findings, the results from this research question suggest the importance of the interpersonal trust in peers for successful knowledge sharing. The results, suggest that managers should support peers' trusting relationships in order to improve the dissemination of know-how and expertise within the organisation. Nevertheless, Renzl (2008) suggests that trust in management is significant for reducing fear of losing one's unique value and improve employees' willingness to document knowledge for organisation planning to increase knowledge sharing. The findings can extend previous literature by suggesting the significant role of interpersonal trust in peers for successful knowledge sharing within organisation.

The results of analyses also showed that the relationship between the perceived cultural value of expertise and knowledge sharing success was also supported. This result suggests that employees are extrinsically motivated to share knowledge and to be known as an expert. Previous studies (e.g. Bock et al., 2005; Lin, 2007) have suggested that a number of extrinsic motivational aspects were found not to influence employees'

knowledge sharing behaviours. Nevertheless, the present research lends support to Kankanhalli et al.'s (2005) findings by suggesting that knowledge sharing success is evident when formal recognition is available. Organisations may improve employees' knowledge sharing success by building on the power of extrinsic rewards to make the system self-rewarding. Such efforts may include job promotion, rewarding performance appraisal format, or organising specific ceremonies for acknowledging employees' contribution to the know-how and expertise exchange within the organisation. As such, the findings may extend prior literature by indicating that employees' knowledge sharing success is significant when their behaviours are formally recognised.

These findings provide support to this research question that examines the association between organisational culture and knowledge sharing success. The results suggest that the perceived values of formal collaboration, trustworthiness, and expertise are all important in determining employees' knowledge sharing success.

6.5 WHAT VALUES DO THE EMPLOYEES PERCEIVE TO BE THE MOST FAVOURABLE (PREFERRED) FOR KNOWLEDGE SHARING SUCCESS?

The result showed that perceived value of formal collaboration has slightly higher importance than expertise in explaining employees' knowledge sharing success. This could also provide an explanation of why involvement is not only significant for knowledge sharing success, but simultaneously important for employees' capability to share knowledge. This result suggests that employees are more willing to share knowledge when they are ready to be involved or to participate in organisational activities (i.e. team meetings, decision making, orientations programmes, specific training and development), and have confidence that their efforts and contributions will formally be rewarded.

Although important for successful knowledge sharing, trustworthiness has less of a contribution in explaining the knowledge sharing outcomes. While the significant effect of trust to knowledge sharing has been corroborated (Al-Alawi et al., 2007; Nayir & Uzuncarsili, 2008; Renzl, 2008; Staples & Webster, 2008), this research has suggested the level of importance for trust in explaining employees' knowledge sharing behaviours. This is an important finding in explaining the power of knowledge in protecting individuals' intellectual ownership. Employees are less likely to share knowledge if their jobs are not secured. This could explain why trustworthiness is ranked as the least important value for knowledge sharing success.

The results suggest that by ranking the preferred values, organisations can identify knowledge management outcome deficiencies, as well as any actions for overcoming any gaps. For example, if organisations find that knowledge hoarding among employees is to some extent contributing to poor job execution, non-conformance, and low quality products, encouraging employees to participate in organisational activities and formally rewarding their effort is advisable. Fostering the cultural values of trustworthiness is also recommended. However, this may not have as great an impact as formal collaboration and expertise do. Depending on organisations' specific situations, they can determine the "right" cultural values that need to be nourished. The importance of reinforcing the right culture and implementing necessary changes for improved organisational performance has been suggested by Armstrong (2009). The author states that:

> "It is not possible to say that one culture is better than another, only that a culture is to a greater or lesser extent appropriate in the sense of being relevant to the needs and circumstances of the organisation and helping rather than hindering its performance. However, embedded cultures exert considerable influence on organisational behaviour and therefore performance. If there is an appropriate and effective culture it would therefore be desirable to take steps to support or

> reinforce it. If the culture is inappropriate, attempts should be made to determine what needs to be changes and to develop and implement plans to change" (p. 394)

In relation to successful knowledge sharing, Armstrong's (2009) view clearly indicates the importance of fostering the "right" culture through combining and recombining expected values relevant depending to specific situation. While the present findings constitute the most favourable values for Malaysian IT workplace culture in facilitating knowledge sharing success, future research should look in more depth into the possible combination effects of these values in determining knowledge sharing success in other research contexts. Consequently, ranking these cultural values in importance indicate that nurturing the right cultural values is vital for knowledge sharing success.

6.6 THE MEDIATING EFFECT OF ORGANISATIONAL CULTURE

As discussed in the previous chapter, for mediation to be evident it is necessary for the mediating variable (organisational culture) to have a significant effect on the dependent variable (knowledge sharing success). This relationship is the subject for research question 3 and was supported. The independent variable of knowledge sharing capability was explored due to its significant impact on knowledge sharing success (i.e. research question 1). Multiple regression analyses were conducted to determine whether organisational culture (i.e. perceived values of formal collaboration, trustworthiness, expertise, and independence) had a mediating effect between knowledge sharing capability and knowledge sharing success. If organisational culture was found to mediate (i.e. perfectly or partially) the relationship between the knowledge sharing capability and knowledge sharing success, the apparent direct relationship could be attributed to this mediation. Absence of any mediating effect suggests that where knowledge

sharing capability had a significant effect on organisational culture, it also had an unrelated significant effect on knowledge sharing success.

As discussed in Chapter 5, perfect mediation occurs if the presence of the mediating variable reduces the effects of independent variable to non-significance. Partial mediation occurs if changes in the dependent variable are attributable partially to the mediating variable and partially to the independent variable. The combined effect of both independent and mediating variables affected the relationships between independent and dependent variables.

Perfect mediation of perceived cultural values of formal collaboration, trustworthiness, and expertise was evident, indicating that their impact on knowledge sharing success is largely attributable to their impact on knowledge sharing capability. This suggests that organisational culture served to enhance and improve employees' capability to share as well as directly affecting knowledge sharing success. Employees' knowledge sharing capability improves their beneficial effects on knowledge sharing success through the organisational culture. These findings support the research in the area of knowledge sharing by suggesting that a desirable and favourable atmosphere may enhance employees' sharing capabilities for achieving its success (De Long & Fahey, 2000; McDermont & O'Dell, 2001; Greengard, 1998; Kim & Lee, 2006; Zarraga & Bonache, 2005). Organisation planning to improve knowledge sharing success may be well advised to ensure employees' capability is enhanced through the nourishment of the perceived cultural values of formal collaboration, trustworthiness, and expertise.

No mediation was evident by knowledge sharing capability in relation to perceived cultural values of independence. This suggests that nourishing the cultural value of independence is not perceived by respondents to be an important aspect in determining perceptions of knowledge sharing success. However, it is clear that in regard to improved knowledge sharing success, through knowledge sharing capability, organisations may encourage and

reward employees' collaboration for expertise sharing within a trustworthy environment.

Therefore, the consideration of the organisational culture is necessary when addressing the relationship between knowledge sharing capability and knowledge sharing success. An understanding of the process by which employees' capability leads to achieve knowledge sharing success must incorporate organisational culture. That is, employees' capability to achieve knowledge sharing success must incorporate cultural values of formal collaboration, trustworthiness, and expertise. To enhance the link of knowledge sharing capability and knowledge sharing success, managers need to encourage employees to formally collaborate in organisational activities within a trustworthy environment for expertise sharing. These results demonstrate that organisational culture is a mediating mechanism through which knowledge sharing capability increases knowledge sharing success.

6.7 THE MODERATING EFFECT OF ORGANISATIONAL CULTURE

The findings suggest that organisational culture influences knowledge sharing success directly and through a moderating effect with knowledge sharing capability. The results suggest that perceived cultural values of expertise and independence did moderate the relationships between knowledge sharing capability and knowledge sharing success. Expertise was found to positively moderate the impact of knowledge sharing capability and knowledge sharing success. These findings show that, as the level of the employees' capability to share increases, nourishing the cultural values of expertise increases employees' knowledge sharing success. However, fostering the cultural value of independence was found to negatively moderate the impact of knowledge sharing capability and knowledge sharing success.

When employees are given more independence, they reported having increased their capability to share knowledge; however reduces the degree of knowledge sharing success. This result is unexpected. Previous research in this area emphasizes the importance of independence or autonomy in explaining knowledge sharing outcomes (Alavi et al., 2005; Cabrera et al., 2006; Janz & Prasarnphanich, 2003, Robertson & Hammersley, 2000). Yet, potential explanation can be related to the influence of the cultural values for the sample under study. The relationship between independence and knowledge sharing success is the subject for research question 3 and was not supported. Thus, the explanations already proposed for this relationship in the previous discussion may hold.

Conversely, an increase in the employees' expertise levels, and an increase in their capability to share, increases the degree of knowledge sharing success. This result is consistent with the previous research about expertise and knowledge sharing behavior (Alavi et al., 2005; Wasko & Faraj, 2005), and suggests that employees share their knowledge when they see that this activity may enhance their professional reputations and expertise.

These findings demonstrate that the presence of relatively higher levels of expertise, as well as the relative absence of independence, both provided a context that enhanced the employees' sharing capability and increased levels of knowledge sharing success. In other words, these results suggest that employees' capability to share is even more valuable for successful knowledge sharing, when coupled with an increased expertise, however, within a formal working environment.

6.8 SOME BROADER RESEARCH IMPLICATIONS

The findings of this research suggest that HRM practice characteristics, perceptions of human attributes (i.e. translated into capability to share knowledge), and perceptions of organisational culture, are important for knowledge sharing success. To facilitate the link of knowledge sharing capability and successrecognising the importance of local workforces'

cultural values is emphasised. This indicates a significant role for both factors in the design of HRM practices, reinforcing Minbaeva's (2008) and Wang and Noe's (2010) suggestions that these should be integrated into HRM practices that aim to facilitate employees' knowledge sharing. This finding is important in helping HRM practices become the robust facilitation tools for employees' knowledge sharing success. This research highlights the importance of how knowledge management practice must consider the critical role that HRM plays in the development of employee capability.

Roberston and Hammersley (2000) suggest that organisations that are capable of creating a unique working environment may increase employees' willingness and ability to share knowledge and skills. In short, these include HRM practices, established within a knowledge-friendly culture, aimed at enhancing individual competency and the use of opportunities offered by organisations. Specifically, this research highlights a significant role for HRM in the development and enhancement of employees' capabilities through the creation of conditions for successful knowledge sharing within organisations. These findings then, provide support for the "employee" case for perceived favourable organisational culture in knowledge-based organisations, which is an integral part of the "business" case for successful knowledge sharing. Thus, the findings could be used to assist stakeholders and management in the design of HRM practices that not only advance employees' know-how, but create successful knowledge sharing, a valued workforce and increase the return of investment from such knowledge management initiatives.

This can be done by ensuring that the design of HRM practices is customised to support the increase of employees' capabilities and to nourish a knowledge-friendly culture within organisation. Re-orientation of practices to culturally align with the local workforce's values to determine the best fit for successful knowledge sharing is advisable. Differentiating organisational investment in governance mechanisms by taking into account both the mediation and moderation effects of organisational culture on knowledge sharing capability for specific situations is also recommended. While identifying new HRM practices is not suggested, this research indicates that

organisations should revamp their existing practices by matching organisational knowledge sharing goals and employee preferred values within their context. This can be achieved by emphasising the “must have” values that support knowledge sharing capability, thus assisting organisations to increase their knowledge sharing success.

In seeking ways to foster these cultural values, managers should consider implementing practices that emphasise formal collaboration, trustworthiness, and expertise believing that these cultural values will motivate people to share their knowledge and expertise across the organisation. For instance, knowledge sharing behaviours have implications for advertising and predictive evaluation criteria in recruitment and selection practices that are part of these HRM processes. Also, the implication of these findings can directly be seen in training and development. In developing the training programme, the approach should be more trainee-centred to allow more employees’ participation in promoting the cross-pollination of ideas among them. Encouraging them to engage in open discussion or debate during the training sessions will further develop their communication skills and competency. Collaboration can facilitate the development of new workplace relationships and help to minimise individuals’ differences, leading to the promotion of trust throughout the organisation.

Rewarding employees’ attendance and active participation in the training sessions with credits or points leading to job promotion or upgrading through yearly performance appraisal, indicates an improvement of individuals’ competence level and links training, competence and collaboration in a meaningful way. Reward and appraisal systems have also been highlighted by other researchers in knowledge-based organisations as significant predictors of employees’ knowledge sharing behaviours (Currie & Kerrin, 2003; Robertson & Hammersley, 2000). Nourishing employees’ acceptable cultural values may improve and maintain organisational retention rates as suggested by Roberston and Hammersley (2000). These findings, then, may contribute to helping Malaysian knowledge based organisations, as well as international investors, gain a competitive advantage through knowledge

sharing. The important implications for specific business context are discussed in the next section.

6.7 IMPLICATIONS FOR BUSINESS

The findings of this research have several important implications for knowledge intensive organisations, Malaysian IT industry as well as other international businesses context, and role of HRM in encouraging knowledge sharing among employees. These implications are discussed in detail in the following section.

6.7.1 Knowledge Intensive Organisations

For knowledge intensive organisations, the finding of this thesis highlights the crucial importance of developing employees' capabilities in order to avoid negative impacts, as well as facilitating subsequent knowledge sharing success. In Robertson and Hammersley's (2000) view, knowledge sharing success has been hindered by organisations' over-reliance on technological solutions, and organisational failure to recognise potential mechanisms for effective knowledge sharing. These authors (p. 251) emphasise that "knowledge creation relied primarily on attracting and retaining those individuals most capable of communicating and synthesising their knowledge and expertise with others". As such, employees' capabilities to share knowledge, and distinctive HRM practices that support sharing are key considerations for KIFs intending to increase their competitiveness.

While many implicitly believe that human capital resources (i.e. knowledge and expertise) can provide an organisation with a source of competitive advantage, the way in which they act is determined by unique historical organisational conditions and/or cultural values, casual ambiguity and social complexity (Barney & Wright, 1998; Wright et al., 1993; Wright et al., 2001). As such, the creation of conditions or environment that supports the internal development of staff through appropriate practices and policies is vitally

important for competitive advantage. For KIFs to effectively support knowledge management initiatives, the design of its practices should be culturally translated to align with values of their local workforces. These results then help KIFs to manage their knowledge governance mechanisms by addressing the desirable values that need to be implemented for employees and change these mechanisms if necessary. One possible approach in this direction is to have managers encourage more employee participation in the organisational activities. Rewarding employees' participation through the procedural transparency of job promotion, special ceremonies, or awards in return of their know-how and expertise exchange should also be given attention.

Managers can foster the development of a trustworthy environment for successful knowledge sharing by:

- Being reliable and rational – good managers should encourage appropriate behaviour from their employees and do so themselves. The breaking of promises should be avoided and decision making should be based on reason rather than emotion. Inspiring and motivating employees to perform jobs in the right way should be encouraged and modelled.
- Being receptive to the employees' needs and concerns. Employees' involvement in organisational activities and their contributions to the success of entire organisations should be acknowledged and rewarded.
- Being sincere - managers should openly admit their strengths and weaknesses to show that they are honest and can be trusted.

6.7.2 Malaysian IT Industry

Although organisations in Malaysia are managed by people from diverse ethnicities (i.e. Malay, Chinese, and Indian), the present findings clearly indicate that the common Malaysian values have significant influence on the

company's culture, as they shape employees' perceptions about knowledge sharing and its outcomes. This conclusion is reinforced by Abdullah's (1996) findings that the common Malaysian values are evident despite each ethnic group having maintained its own cultural identity. While all perceived cultural values, except independence, matter to employees, they are also valuable to employers because they promote knowledge sharing leading to successful organisational performance. In this research, the lack of support for independence clearly indicates the importance of respect for authority, which could also be linked to the value of either a hierarchy or the preserving others' face. The establishment of these new cultural labels that mirror the country's culture of the sample origin adds to the cultural research literature. This finding is relevant to Malaysian IT industry, as well as international business leaders, who may be apprehensive about the link between an investment in knowledge management initiatives and positive business outcomes.

For international business leaders, these results signify the importance of respect and being sensitive to the cultural values of local workforces, particularly in the IT industry. This perhaps serves as an indigenous recipe for supporting organisational knowledge management initiatives among Malaysian IT workforces. Equally important is for expatriate leaders to understand that Malaysians are obedient and less likely to go against their superiors' wishes. Thus, to achieve successful employee knowledge sharing, expatriate leaders must encourage local subordinates to overcome their introverted attitude to expressing views and ideas, yet be polite and well-mannered within the expected Malaysian cultural values.

For Malaysian IT organisations, the emergence of new cultural labels indicates that many of the western/foreign values that underlie HRM practices in relation to knowledge sharing may not effectively transfer to all workplaces. Local HRM practitioners should have an understanding of what constitutes acceptable and desirable values that align with the establishment of practices at the workplace to be considered effective managers. One

possible approach in this direction is to have managers evaluate employees' preferred values and find the best possible way to incorporate them into the design of practices at the workplace for KM initiatives and thus increase knowledge sharing success. Organisational stakeholders, and especially management, should explore and develop individual and collectively based reward systems to encourage and promote these managerial practices, as well as reinforcing these values in the design of organisational practices that have become part of the Malaysian IT work culture.

For example, if management is already aware of their cultural values, it can critically select any of those values or combine both local and foreign values to support positive knowledge sharing behaviours. While some values may act as barriers to progress, there are others which can be marshalled and used to facilitate knowledge sharing among employees. Identifying and testing alternative managerial techniques, based on appropriate local and foreign values that the local workplace can assimilate, should be the basis in supporting any organisational knowledge management initiatives. This is because organisational culture is so context bound that it must be de-contextualised at the management level before being nourished and ultimately re-contextualised by the employees as it seeks to make meaning of the acceptable and desirable culture within its environment. This conclusion matches Robertson and Hammersley's (2000, p.251) view that "cultural fit implied a willingness and ability to share knowledge and skills" as well as increased employee loyalty, when organisations nourished a unique working environment. A culture within the organisation that is supportive of knowledge sharing was found to be central to achieving an improvement in knowledge sharing success.

6.7.3 The Role of HRM in Encouraging Employees Knowledge Sharing

The findings offer the potential for HRM practitioners to optimise knowledge sharing success within an organisational context through human capital and organisational culture. For practitioners, the findings of this research offer

evidence that employee sharing capability and a “knowledge-friendly culture” is of significant importance in influencing the way employees interact with each other and whether they are willing to share their knowledge. The study found that all of the key variables associated with knowledge sharing success pertain to HRM practitioners, managers and supervisors directly and their role in increasing employees’ capabilities to share knowledge and fostering a knowledge sharing culture. Together, the findings of this research impact on the HRM’s two broad functions: increasing employee’s sharing capability; and nourishing favourable (desirable) organisational culture values for successful knowledge sharing.

- ***HRM functions for increasing employee’s capability to improve knowledge sharing success***

The results emphasise the need to increase employees’ capabilities through organisational specific training and development programmes, competence-based performance appraisal, rewards, or buying talented and competent staff. It should be noted that HRM strategies involving the development of employees’ capabilities must take into consideration the role that organisational culture plays. Awareness of this finding can help shareholders and management target appropriate points where investments in fostering cultural values to promote employees’ capabilities are more likely to have payoff for the organisation.

For example, in designing training and development programmes for increasing employees’ sharing capabilities, HRM managers should critically evaluate and examine:

i) The possibility for expected local workforce cultural values to be integrated within the training context; and,

ii) the organisational strategic planning that aims to support knowledge sharing so that the training and development programmes are aligned accordingly.

Both supervisors and employees should be consulted so that training designs match the sharing capabilities needed to facilitate job execution. This will ensure that accurate knowledge and skills needed to increase employees' sharing capabilities are identified.

Supervisors can assist HRM managers by identifying the strengths and weaknesses of their subordinates for the determination of the pre-requisite training needed. In doing so, supervisors are required to discuss with their subordinates and together they select the most appropriate training suitable for them. In this discussion, supervisors should make explicit that the purpose of the training is to improve job performance through knowledge sharing. Subordinates must be given an expectation that they will be expected to share the learned knowledge and skills obtained from training with others and this may be evaluated through competence-based performance appraisal. It is likely that if this expectation is met, the effort devoted to transferring learning will lead to changes in job performance and there will be greater knowledge sharing success. In supporting this effort, supervisors and managers should also be considered for core training on issues such as rewards systems, competence-based performance evaluation and what constitutes constructive feedback.

In addition to this effort, organisations can also improve knowledge sharing success by hiring someone with the right talents or core competencies required. While the traditional hiring approach has focused primarily on evaluating a candidate's skills and technical qualifications, both talent and competency based approaches emphasise the importance of finding the "right" candidate that can fit to the designated role as well as establishing the behavioural traits required (Hiltrop, 1999; Hughes & Rog, 2008; Rowe, 1995). HRM managers can contribute to the shifting of hiring paradigm for the "right" candidates by incorporating extensive staffing procedures as suggested by Minbaeva (2005, p. 140) to include "examination of the competencies, extensive recruitment and selection procedures".

- ***HRM functions for fostering a knowledge-friendly culture to improve knowledge sharing success***

The importance of a favourable workplace environment in the success of knowledge sharing has been emphasised in the previous research (Cabrera & Cabrera, 2002; Zarraga & Bonache, 2005). This finding on the benefits of perceived favourable (preferred) values of organisational culture seems particularly promising for HRM in light of the fact that prior research has suggested that friendly and acceptable sharing culture is among the critical drivers for successful investment in KM initiatives (O'Dell & Grayson, 1998; De Long & Fahey, 2000). Practitioners might find it fruitful to focus on ways to nourish a desirable and acceptable organisational culture as a pragmatic way to increase or further develop their employees' capabilities to share knowledge and expertise for successful knowledge sharing within organisation.

The findings offer evidence that identifying the cultural values that employees believe favour knowledge sharing will assist the practitioners in dealing with "expertise" sharing among knowledge workers. This research suggested that the important cultural values for successful knowledge sharing were involvement, formal recognition, and trustworthiness. The literature suggests that HRM can help the organisation to foster the culture of sharing through the design of its practices (Bollinger & Smith, 2001; Greengard, 1998). For example, for organisations planning to improve and gain success from knowledge sharing, the design of their practices (i.e. performance appraisal, rewards, training and development, staffing) should emphasise the importance of employees' participation, trustworthiness, and reward effort. Nurturing a trustworthy environment through the establishment of an atmosphere of openness, showing the benefits of knowledge sharing, an involvement of leadership in these practices, rewarding employees' for participation, and demonstrating commitment to specific organisational training and development should also be emphasised.

6.8 IMPLICATIONS FOR THEORY

This research makes a number of significant contributions to the literature in both HRM and KM. It contributes to the growing body of literature that seeks to place KM concepts such as knowledge sharing behaviour in the broader HRM literature, connecting these two disciplines, and in the process helping both disciplines break away from the shackles of technology that were so evident in the early years of the discipline. This research examined a number of relationships that were widely reported in the literature. However, it has been one of the few studies into knowledge sharing that examines some such relationships (i.e. knowledge sharing capability, organisational culture, and knowledge sharing success) from employees' perceptions. This provides a better understanding from the ground zero (bottom layers of the organisation) of the organisation in supporting current organisational strategies and perhaps influences new strategic directions to fuel competitive advantage. The findings of this research may serve as "guidelines" that are to be considered at the time of establishing or re-orientating organisational HRM and KM practices.

The identification of new components for organisational culture subscales (see figure 6.1 for resultant conceptual framework) suggests that the scales are sensitive to differences in culture, be it organisational or country of origin.

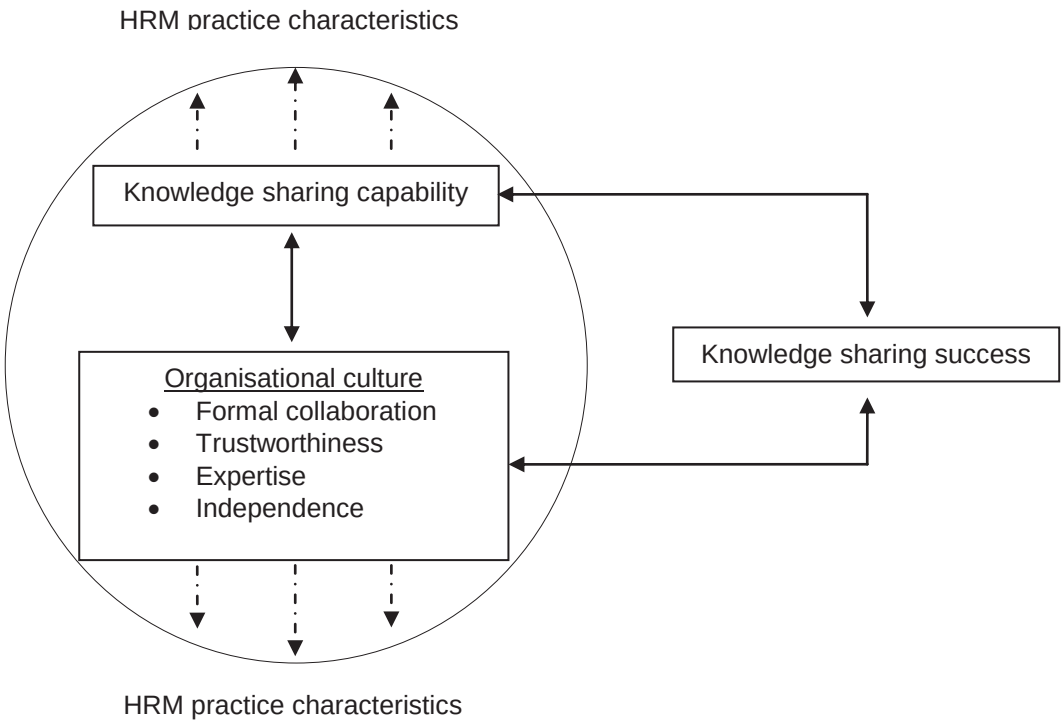


Figure 6.1. The resultant conceptual framework

The establishment of formal collaboration through the clustering of organisational culture questionnaire items that emphasised collaboration and formalisation within work units, is consistent with Abdullah's (1994) findings on the common Malaysian cultural values. Formal collaboration may be a reflection of either the concept of collectivism or relationship orientation or a combination of both. This is also the case for the sample's liking for well-developed procedures for responsive management style and strategies that nurtured trustworthiness amongst group members at work. Malaysians are status conscious and do respect hierarchical differences. So the establishment of expertise that emphasises the importance of recognition as expert and helpful employees are behaviours that mirror these values.

The emergence of key themes that explain respondents' perceptions about self-determination, flexibility of specific rules, and procedures in executing tasks (renamed as independence) may be a reflection of either the concept of face or hierarchy orientation or a combination of both. Contrary to findings reported elsewhere in the literature, independence was not found to be

related to employees' competence or knowledge sharing success, suggesting that cultural contexts may have influence on the relationships among these constructs. Nonetheless, mixed support for other relationships has been found to be in accordance with findings from previous studies. This suggests the applicability of all constructs for the context of the current research.

This gives possible explanations for the nature of the influences on the sample and the different relative importance of the items measuring organisational culture values. These unanticipated results may be a reflection of the characteristics of the sample in the Malaysian context. Thus, research conducted in other societies may show the emergence of other organisational culture reflecting values that are part of their societies.

This research investigated a number of relationships that have generally been ignored in the literature, and developed an exploratory model explicating such relationships. The main argument developed in this research was that the list of potential HRM practices for facilitating knowledge sharing has grown without reaching any consensus on "one universally applicable truth" or "best practice approach". While suggesting or finding the best practice for knowledge sharing is beyond the focus of this research, the central attempt is to initiate ways as to help HRM practices become the best facilitation tools for knowledge sharing success within organisations.

To understand this, as supported in the literature, a medium of dissemination incorporating human behaviours (i.e. capability to share knowledge) and workplace environment (i.e. organisational culture) has been proposed. The findings suggested that employees' capabilities to share knowledge and organisational culture were positively correlated, and that they were significantly associated with knowledge sharing success. This highlighted the importance of incorporating cultural and human attributes characteristics in the development or design of HRM practices so they are success catalysts within organisations.

This importance of employee sharing capability for successful knowledge sharing supports an equal role for human resources as for KM systems do, bringing the human resources more into the KM equation. The findings also indicate how employees' behaviour and organisational cultural values may differ in terms of their impact on knowledge sharing success, answering Foss, Husted and Michailova's (2010, p. 474) calls for the "situation-specific nature of knowledge sharing benefits". In this research, the perceived values of formal collaboration, trustworthiness, and expertise acts as a mediator to attenuate the positive relationship between knowledge sharing capability and knowledge sharing success, suggesting that deploying the appropriate knowledge governance mechanism that bridged the situation-specific and individual behaviour may contribute to knowledge sharing success. Perceived cultural values of expertise and independence did moderate the link between knowledge sharing capability and knowledge sharing success. While both values may be beneficial for enhancing employees' capability, the absence of independence is required for achieving successful knowledge sharing.

The results of this research then, shed light on how HRM practices can become the best facilitation tools (within specific contexts) in supporting knowledge sharing success. In essence, while new or best practices are not recommended, the call for the re-orientation of HRM practices is suggested by aligning them with the local workforces' cultural values. This is because organisational culture has a significant influence on the design of HRM practices as Biswas (2009) suggested. While most current literature on HRM practices deals with knowledge sharing (Currie & Kerrin, 2003; Hsu et al., 2007), it has generally ignored the role of organisational culture; this research initiates ways that the culturally translated practices could contribute to positive knowledge sharing outcomes.

This research contributes to the SHRM and RBV literature by suggesting that organisations desiring competitive advantage should consider establishing practices that are customised to suit their local workforce values. This supports the RBV that suggests the development of human capital capability,

within culturally translated practices, can be a source of competitive advantage. These unique interactions, in eliciting desired behaviours supportive of organisational competitive strategies, can create an isolation mechanism that makes replication/imitation difficult (Barney & Wright, 1998; Boxall, 1996; De Saa-Perez & Garcia-Falcon, 2002; Wright et al., 1993).

This research contributes to the knowledge sharing and organisational learning literature by providing a more detailed understanding of two unique dimensions of perceived level of knowledge sharing capability and its effect on knowledge sharing success within organisations. This finding also shows how social capital dimensions of shared language and codes, obligations and expectations, and network ties can interact with knowledge internalisation in terms of satisfaction with, commitment to, and ownership of the shared knowledge. Based on the findings of this research, the initial conceptual framework that seeks to explain how knowledge sharing behaviour can be fostered in organisational contexts was modified. The exploratory power of the resultant model (see figure 6.1) supports Gooderham, Minbaeava and Pedersen's (2011) suggestion by demonstrating the value of using social capital theory in explaining employee behaviour for successful knowledge sharing. This study provides a better understanding of how the characteristics of social capital dimensions make the social fabric of an organisation more or less effective in sharing knowledge and achieving its success.

While the present research benefits from a quite small sample of knowledge workers, the use of higher order of statistical methods (i.e. ANOVA, factor analysis, correlation, and multiple regressions) in maximising the utilisation of this small sample further strengthens this research. For example, analysis of variance (ANOVA) was conducted to examine any evidence of significant differences between subgroups of employees on knowledge sharing capability, organisational culture and knowledge sharing success. Apart from determining construct validity, factor analysis was also used to reduce the questionnaire and identify how the items clustered around underlying themes or components. In this research, the final questionnaire was comprised of

items grouped in subscales, each of which were designed to measure the concepts shown in the tested conceptual framework. These subscales were made up of actual items that had already been used in measuring such concepts in previous studies, or were constructed by the researcher based on the literature. Factor analysis explored and confirmed that the items were a reliable measure of the concepts in the model. The identification of new components for organisational culture values has demonstrated that the measuring instruments that were sourced from the literature have been found to be fairly robust and applicable to the context of the current research.

The research makes important contributions about the relationships among the concepts proposed and investigated. This research has initiated way of bridging HRM and KM through the relationships between employees' perceptions of knowledge sharing capability, organisational culture, and knowledge sharing success.

6.9 RESEARCH LIMITATIONS

As in any research, issues came to light through the course of the study which imposed some limitations. These relate to the sample and the nature and scope of the items of the questionnaire.

6.9.1 Sample

As accessibility to samples of employees is a vital concern, a Malaysian sample was chosen to test the relationships proposed in the present research. Thus, the major limitation of this study is that the findings may only be generalised to the Malaysian IT organisations of two states. This means that the 270 knowledge workers in this study may be representative only of a sub-sample of all knowledge workers in Malaysian IT organisations. Researchers who attempt to replicate this investigation in other parts of the world may obtain different results. This may be due to diverse business practices, cultural issues, or values in other regions. In addition, the

implementation and reinforcement of HRM practices may differ among Malaysian organisations and those operating in the former centrally planned economies, such as Russia, Poland or China, as well as organisations in the developed countries. As such, the organisational cultural values that reflect common Malaysian values could be different if the study is conducted in other settings. These new created values could also be influenced by some unique characteristics of the organisations under study or may symbolise certain characteristics of IT organisations.

Although every attempt was made to obtain data from all qualified organisations, the sample was largely representative of only four (4) IT organisations. Seven organisations initially agreed to participate in the study, but because of the economic crisis during the data collection period, three organisations were in the midst of restructuring. Consequently, the returned questionnaires were not as expected. Despite initially anticipating 500 returned questionnaires from those seven organisations, only 500 questionnaires were sent out to the accessible populations. Of these, only 270 were considered usable, representing a 54% response rate. Thus, the results of this research must be viewed with some caution since, although the response rate was high, using a sample from within only one industry is a potential limitation to the generalisability of the results. Although a broader sample of industries and employees would have been able to confirm the trends noted as specific to Malaysia or other contexts, such a sample was not possible at this time, because of access and logistical issues.

This research relied on respondents identified as knowledge workers by management of each participant organisations. Thus, the number of qualified respondents received varied from 100 to over 200 per organisation. This resulted in disproportionate representation from some organisations as well as an apparent disproportionate representation of management and non-management respondents within the data set. The sample has showed the prevalence of non-management, with this group representing over 70% of the sample (see Table 5.1). This may be a reflection of the general structure within organisations where non-management (employees) make up a

significantly greater number in organisations than management. To overcome any potential bias this may have created, the analysis divided data into management and non-management for comparison. However, ANOVA results showed that no significant differences were evident between these two groups of employees on perceived level of knowledge sharing capability, organisational culture, and knowledge sharing success. Further analyses were unable to separate them for such comparison and this warrants further empirical confirmation.

Logically, specifying a restricted number of respondents, along with their levels (category) per organisation, could overcome the problem of disproportionate sample representation. However, doing so would likely have reduced the number of respondents per organisation, and consequently would have decreased the total sample size. However, by obtaining as many different views as possible from within each organisation, the data was enriched by multiple respondents compared with the general one response per organisation used in many studies.

6.9.2 The Nature and Scope of the Questions

This research uses self-report, perceptual, and multiple-item measures of all constructs shown in the tested conceptual framework (see Figures 3.2). This adds further limitations to the current findings. As employees' perceptions are interpretive and not "fact", they still can be seen as "soft" indicators for all variables under study. From a HRM perspective, the establishment of soft measures through employees' perceptions may relate to the organisation's reputation with their internal labour market. The non-existence of "hard" indicators (such as financial or economic) of knowledge sharing capability, organisational culture, and knowledge sharing success further support the relevancy of employees' (respondents') perceptions to be used in this research. Minbaeva et al. (2010, p. 24) have suggested that "perceptual and self-reported measures have been argued to be most suitable for the study

of individual human behaviours and, when employed as part of a rigorous research design, may even be superior to other approaches".

Other research methods such as direct observation or focus groups may have alleviated the problem of over-reliance on self-reports. However, they were impractical to undertake for the present research due to time and cost constraints. In relation to multiple-item measures, future research may examine the relationship proposed in the model with different and perhaps lengthier measures. Although the scales used in this research were in the desired range of reliability and validity, they were not tested on a different sample of other IT employees, throughout Malaysia, as well as other industries. Replication of this study by utilising different sample may increase the confidence in the results obtained.

6.10 FUTURE RESEARCH

There are several directions for future research that originate from the findings of this research. The initial focus of the study was on employees' capabilities to share knowledge and the impact of this on knowledge sharing success. The aspect of organisational culture emerged during the literature search process and was included in the conceptual framework, survey development, analysis and discussion of the findings. This study should be seen as the beginning of the research into the relationships between the framework constructs, which are significantly related to organisational performance. Future research can extend the current study in a number of ways:

- The evidence presented here is based on four IT organisations of two states in Malaysia. This inevitably limits its scope for broad generalisation. However, given the growing importance of knowledge sharing for competitive advantage, similar problems are likely to occur in other IT organisations or KIFs, and across a wider range of industries and national contexts. Further empirical confirmation based on employees' perceptions gathered from other types of organisations

from different countries and in both public and private sectors is warranted to further generalise the findings.

- This research also acknowledged the disadvantage of using perceptual instruments to measure the concepts in the proposed model. The use of survey questionnaire alone is unable to explain "facts" in the same ways as qualitative techniques (i.e. case study, direct observation, focus group). It would therefore be useful if future research to employ qualitative or triangulation techniques to analyse the IT organisations or KIFs in greater depth, as well as to confirm the results obtained. Future research will also benefit from combining the perceptual data obtained in this research with the more objective indicators for further developing measures, as suggested by Minbaeva et al. (2010).

- The significant differences in perceived importance and operation of organisational culture between participating organisations provide another useful area for further research. This perhaps suggests that organisational culture reflects the management/leadership style of the entire organisation. Future research into factors contributing to these differences may inform and provide guidance for organisations in managing knowledge sharing for competitive advantage. Investigation into the type of management styles and their subsequent relationships with sharing capability and its outcomes are another useful area of further research.

- Further research should be undertaken to clarify the relationship between demographic variables (i.e. gender, academic qualification, age, position in the organisation and working experiences) and their association with knowledge sharing capability, organisational culture and knowledge sharing success.

- The literature suggests that autonomy (named as independence in this research), is causally related to knowledge sharing. Yet in this

research, independence only related to knowledge sharing capability. It would be beneficial if future research is conducted to explore these relationships further, using different samples from Malaysian context, to see whether the lack of relationship reported here generally holds, or is just an artefact of the sample selected for this research. Results would be relevant to organisational decision-makers and HRM practices.

- It is acknowledged that the evidence presented here is only an exploration of relationships to provide a better understanding of human behaviours, organisational culture and their relationships with knowledge sharing outcomes within the KIFs (IT organisation) environment. The tested conceptual framework can be seen as simplistic in nature and may not fully reflect the complexity of real KIFs environment. It is recommended that future research is carried out to advance and validate the resultant conceptual ideas explored in this framework.

- Given the significant association of organisational culture on knowledge sharing success found amongst respondents of this research, further research into the concept of culturally translated HRM practices and knowledge sharing success would be of interest to those involved in implementation of knowledge management strategies. Whether the results from fostering employees' favoured cultural values and the re-orientation of HRM practices provide the basis for predicting knowledge sharing success in IT organisations needs further study and will require specific empirical confirmation. Perhaps the greatest potential for successful knowledge sharing can be realised by focusing on integrating these values in the design of HRM practices, supported by implementation of these practices.

- This research also acknowledged that many other factors besides employees' capabilities or organisational culture could influence knowledge sharing success within organisation. There is also a

possibility of any other complex relationships between HRM practices and other organisational resources, such as customers that goes beyond the objectives of this research. Investigating the influence of internal and external factors on knowledge sharing success is a further area of research in this field.

6.11 CHAPTER CONCLUSION

This Chapter presented a discussion of the major findings of the research drawn from the descriptive statistics and multivariate exploratory analysis presented in Chapter 5. Based on the findings of this research, the resultant conceptual framework for knowledge sharing capability, organisational culture, and knowledge sharing success was presented in Figure 6.1. The resultant conceptual framework was then modified to examine the role of organisational culture in the relationship between knowledge sharing capability and knowledge sharing success. Key findings in relation to the relationships of each of the variables were provided together with recommendations for successful knowledge sharing within organisational context.

This thesis has provided an understanding of the various factors that affect knowledge sharing success in IT organisations. It has identified four favourable cultural values of knowledge sharing success. This finding has highlighted the significant role of HRM in the development and enhancement of employees' capabilities through the creation of conditions for successful knowledge sharing within organisation. Apart from this, this research has documented the outcomes of facilitating factors for successful knowledge sharing in selected Malaysian IT organisations. This knowledge is valuable and important for those planning to embark and operates IT businesses in Malaysian settings. The findings of this exploratory research can provide a theoretical foundation for further research in the area of both HRM and KM in Malaysia and internationally.

The present research aimed to broaden the understanding of employees' knowledge sharing behaviours in the workplace through relationships between organisational culture, knowledge sharing capability, and knowledge sharing success. The framework aims to help HRM become the best facilitation tool so that its practices can act as success "catalysts" for knowledge sharing within organisations. The clustering of new components for both organisational culture and knowledge sharing capability concepts expands the existing literature of this area (e.g. Kelloway & Barling, 2000; Oltra, 2005; Minbaeva, 2008, Minbaeva et al., 2010; Wang & Noe, 2010). It is clear that knowledge workers play a significant role in KIFs workforce; however, the "myth" of their knowledge sharing behaviours needs to be better understood. By focusing on employees' capabilities to share knowledge and their perceptions on the cultural values that favour knowledge sharing, the present study refined understanding of what conditions allows this to occur successfully and the relationship connections could lead into several valuable lines of research.

CHAPTER 7: THESIS CONCLUSION

Knowledge sharing has been widely recognised as an effective approach to maintaining organisations' sustainable competitive advantage. However, one of the most important challenges facing today's organisations is the way to effectively manage this intangible resource because within organisations, knowledge is not symmetrically distributed (Davenport & Prusak, 2000). This thesis suggests that this is where HRM practices play a critical role.

HRM can facilitate the success of knowledge sharing among employees through its practices. Previous research has suggested a list of potential HRM practices believed to facilitate knowledge sharing to include staffing, performance appraisal, training and development, career management, and rewards (Cabrera & Cabrera, 2006; Currie & Kerrin, 2003; Minbaeva, 2008; Robertson & Hammersley, 2000; Yahya & Goh, 2002). However, identifying the best or appropriate facilitation practices for organisations wishing to gain benefits from knowledge sharing is still a debatable issue that needs addressing.

Two factors have been proposed that impact on and need to be incorporated in the design of such HRM practices (Minbaeva, 2008; Wang & Noe, 2010). These are human attributes (i.e. employee ability, motivation, and opportunity to share) and organisational culture. While different proxies have been used to illustrate human attributes that facilitate knowledge sharing, the present research translated them into employees' knowledge sharing capabilities. Six organisational cultural values were postulated as having a significant role in the achievement of knowledge sharing outcomes. These values are collaboration, innovativeness, formalisation, autonomy, expertise, and trust.

The goal of this thesis was therefore to establish employees' perception on the key questions: 1) is there any relationship between knowledge sharing capability and knowledge sharing success? ; 2) is there any relationship between knowledge sharing capability and organisational culture? ; 3) is

there any relationship between organisational culture and knowledge sharing success? ; and, 4) what values do employees perceive to be the most favourable (preferred) for knowledge sharing success?

A questionnaire comprising items on organisational culture, knowledge sharing capability and success, as well as demographic information questions was sent to the knowledge workers of four IT organisations in Malaysia. 270 useable responses received were coded in PASW and data screening was undertaken to ensure that the data was clean to be used for further analyses. Principal components analysis (PCA) was used to extract and compute composite coping scores for the factors underlying the constructs under study. Results identified four organisational culture values that reflected indigenous common Malaysian values: formal collaboration, trustworthiness, expertise, and independence. ANOVA was carried out to decide whether or not further analysis should distinguish respondents by subgroups of employees. No significance differences were found, suggesting that further analysis does not distinguish the respondents by the subgroups of employees. Correlation and multiple regression analyses were used to examine the proposed relationships. Having addressed the results for each result of these outcomes in chapter 5, this research has drawn three important conclusions.

First, employees' knowledge sharing capabilities and a knowledge-friendly culture are the important characteristics to be integrated in the design of knowledge-driven HRM practices. Second, the emergence of new cultural labels indicates that many of the western values that underlie HRM practices with respect to knowledge sharing may not effectively transfer to all workplaces, particularly in the Malaysian context. Third, a favourable knowledge sharing culture in the organisation's HRM practice environment is essential for the development of employees' knowledge sharing capabilities. Formal collaboration, trustworthiness, expertise, and independence have been found to be the most important cultural value for the development and enhancement of this capability in facilitating knowledge sharing. The research indicates about the role and importance of organisational culture in

the relationships between knowledge sharing capability and knowledge sharing success. The perceived cultural values of formal collaboration, trustworthiness, and expertise perfectly mediate the relationship between knowledge sharing capability and knowledge sharing success. The perceived cultural values of expertise and independence did moderate these relationships; however, independence is only a significant predictor for knowledge sharing capability. Thus, employees' capability is increased for achieving successful knowledge sharing through the nourishment of cultural values of expertise.

The findings suggest the importance of critically evaluating and identifying the most appropriate values to foster according to organisations' specific knowledge sharing deficiency conditions. Ranking cultural values in order, the cultural values of formal collaboration followed by expertise play the important role for achieving knowledge sharing success. Although trustworthiness was found to be the least important, it is not advisable to ignore the value in facilitating employee knowledge sharing success as it is still an important ingredient of knowledge sharing (Renzl, 2008; Staples & Webster, 2008). This knowledge is of paramount importance to Malaysian organisations and other international leaders who are interested to venture new business opportunities, particularly IT industry in Malaysia.

These conclusions have a number of implications for the practice of HRM in organisations. First, for knowledge-based organisations, the importance of developing human capital capabilities is vital. Capable workforces supported with a knowledge-friendly environment may reduce organisations' over–reliance on information technology solutions in facilitating employee knowledge sharing success. Second, this research contributes to Malaysian IT industries by suggesting that efficient local HRM managers should wisely and diligently combine both local and appropriate foreign cultural values in the design of their knowledge-driven HRM practices. Third, HRM can support knowledge sharing success by increasing employees' capabilities to share and by fostering an appropriate culture that supports capability development, and stresses the importance of knowledge sharing to organisational

competitiveness. Due to the vulnerable nature of practices within specific cultural contexts, the concept of best practice may be applicable but not generalised to all workplace contexts. The call for re-orientation of the knowledge-driven practices to be culturally translated is advisable in determining both internally and externally best fit practices within specific organisational contexts. Re-orientation of knowledge-driven practices should emphasise the values of formal collaboration, trustworthiness, and expertise. Independence was not important for knowledge sharing success because other cultural values relating to status and due respect take precedence. These values must be seen to co-exist with other management/managerial approach (i.e. goal clarity, leadership, accountability, commitment, continuous improvement, determination, etc.) in driving competitive Malaysian IT workforces.

These findings also add to the body of knowledge in this field. First, this thesis bridges HRM and KM through its proposed relationships and provides insights into the key issues of employees' capabilities and knowledge-friendly cultures that may act as predictors of improved knowledge sharing outcomes. Second, the thesis provides a framework for examining the influence of HR capability to share and organisational culture on employees' knowledge sharing success. This model clarifies the influence of HR capability and organisational culture in the design of knowledge-driven HRM practices, by initiating ways that culturally translated practices can contribute to knowledge sharing success, an area previously overlooked by HRM scholars. This suggests that the performance of knowledge-driven practices can be improved by incorporating these characteristics (i.e. employees' capabilities and organisational culture) into HRM designs. Thus the study extends the somewhat scarce literature on employees' knowledge sharing success. Third, while most knowledge sharing research has often utilised a single representative opinion (i.e. management) from each organisation (e.g. Nayir & Uzuncarsili, 2008), this is one of few studies into knowledge sharing that examines employees' perceptions on knowledge sharing capability, organisational culture, and knowledge sharing success.

While this thesis benefits from the use of self-report, perceptual, and multi-item measures as a data collection method, these “soft” measures limit the findings. Future research should employ qualitative or triangulation techniques to analyse the IT organisations or KIFs in greater depth, as well as to confirm the results obtained. The small sample size also limits the generalisability of these findings. Replicating this conceptual framework with other types of organisations from different countries and in both public and private sectors is warranted. The need to consider the integration of values favoured by employees in the design of HRM practices, and the effective implementation of these practices and their impact on knowledge sharing success will likely retain prominence on the HRM research agenda for a considerable period of time to come.

REFERENCES

Abdullah, A. (1994). Leading and motivating the Malaysian workforce. *Malaysian Management Review, 29*, 24-41.

Abdullah, A. (1996). *Going glocal: Cultural dimensions in Malaysian management*. Kuala Lumpur, Malaysia: Malaysian Institute of Management.

Abdullah, H. S., Abu Hassim, A., & Chik, R. (2009). Knowledge sharing in a knowledge intensive organisation: Identifying the enablers. *International Journal of Business and Management, 4*(4), 115-123.

Abdul Jalal, H., Toulson, P., & Tweed, D. (2010). *Human resource (HR) knowledge sharing capability, organisational culture, and knowledge sharing success: Implications for HRM practices.* Paper presented at the HRINZ Research Forum, University of Auckland New Zealand.

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.

Adler, P. S., & Kwon, S.-W. (2002). Social capital: Prospects for a new concept. *The Academy of Management Review, 27*(1), 17-40.

Aitken, C., Power, R., & Dwyer, R. (2008). A very low response rate in an on-line survey of medical practitioners. *Australian and New Zealand Journal of Public Health, 32*(3), 288-289.

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.

Alavi, M., Kayworth, T. R., & Leidner, D. E. (2005). An empirical examination of the influence of organizational culture on knowledge management

practices. *Journal of Management Information Systems, 22*(3), 191-224.

Allee, V. (1997). *The Knowledge Evolution : Expanding Organizational Intelligence*. Newton, MA: Butterworth-Heinemann.

Alvesson, M. (2004). *Knowledge work and knowledge-intensive firms*. Oxford: Oxford University Press.

Amabile, T. M., Conti, R., Coon, H., Lazenby, J., & Herron, M. (1996). Assessing the Work Environment for Creativity. *The Academy of Management Journal, 39*(5), 1154-1184.

Andrawina, L., Govindaraju, R., Samadhi, T. A., & Sudirman, I. (2008). *Absorptive capacity moderates the relationship between knowledge sharing capability and innovation capability.* Paper presented at the 2008 IEEE International Conference On Industrial Engineering And Engineering Management, Singapore.

Argote, L., & Ingram, P. (2000). Knowledge Transfer: A Basis for Competitive Advantage in Firms. *Organizational Behavior and Human Decision Processes, 82*(1), 150-169.

Argote, L., McEvily, B., & Reagans, R. (2003). Managing knowledge in organizations: An integrative framework and review of emerging themes. *Management Science, 49*(4), 571-582.

Armstrong, M. (2003). *A Handbook of Human Resource Management Practice* (9th ed.). London, UK: Kogan Page.

Armstrong, M. (2009). *Armstrong's Handbook of Human Resource Management Practice* (11th Edition ed.). London: Kogan Page.

Avison, D. E., & Myers, M. D. (1995). Information systems and anthropology: an anthropological perspective on IT and organizational culture. *Information Technology & People, 8*(3), 43-56.

Awad, E. M., & Ghaziri, H. (2004). *Knowledge management* (1st ed.). Upper Saddle River, N.J.: Prentice Hall.

Azudin, N., Ismail, M. N., & Taherali, Z. (2009). Knowledge sharing among workers: A study on their contribution through informal communication in Cyberjaya, Malaysia. *Knowledge Management & E-Learning: An International Journal, 1*(2), 139-162.

Babbie, E. (2002). *The basics of social research : second edition*. USA: Wadsworth Thomson Learning.

Baker, M. J. (2003). Data collection- Questionnaire design. *The Marketing Review, 3*(3), 343-370.

Bakker, M., 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*(1), 99-120.

Barney, J. B. (2000). Firm Resources and Sustained Competitive Advantage. *Advances in Strategic Management, 17*(1), 203-227.

Barney, J. B., & Wright, P. M. (1998). On becoming a strategic partner: The role of human resources in gaining competitive advantage. *Human Resource Management, 37*(1), 31-46.

Baron, R.M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*, 1173-1182.

Bartol, K. M., & Srivastava, A. (2002). Encouraging knowledge sharing: the role of organizational reward systems. *Journal of Leadership & Organizational Studies, 9*(1), 64-76.

Berrio, A. A. (2003). An organisational culture assessment using the competing values framework: A profile of Ohio State University extension. *Journal of Extension, 41*(2). Retrieved from www.joe.org/joe/2003april/a3.shtml

Bhatt, G. D. (2002). Management strategies for individual knowledge and organisational knowledge. *Journal of Knowledge Management, 6*(1), 31-39.

Bhatta, G. (2001). Enabling the cream to rise to the top: A cross-jurisdictional comparison of competencies for senior managers in the public sector. *Public Performance & Management Review, 25*(2), 194-207.

Biswas, S. (2009). HR practices as a mediator between organizational culture and transformational leadership: Implications for employee performance. *Psychological Studies, 54*(2), 114-123.

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.

Boland, R. J., Jr., & Tenkasi, R. V. (1995). Perspective making and perspective taking in communities of knowing. *Organization Science, 6*(4), 350-372.

Bollinger, A. S., & Smith, R. D. (2001). Managing organisational knowledge as a strategic asset. *Journal of Knowledge Management, 5*(1), 8-18.

Bontis, N., & Serenko, A. (2007). The moderating role of human capital management practices on employee capabilities. *Journal of Knowledge Management, 11*(3), 31-51.

Boudreau, J., Hopp, W., McClain, J. O., & Thomas, L. J. (2003). On the interface between operations and human resources management.(Commissioned Paper). *Manufacturing & Service Operations Management, 5*(3), 179-202.

Boxall, P. (1996). The strategic hrm debate and the resource-based view of the firm. *Human Resource Management Journal, 6*(3), 59-75.

Boxall, P., & Purcell, J. (2011). *Strategy and Human Resource Management* (Third ed.). Basingstoke, Hampshire UK: Palgrave MacMillan.

Brauner, E., & Becker, A. (2006). Beyond knowledge sharing: the management of transactive knowledge systems. *Knowledge and Process Management, 13*(1), 62-71.

Brown, A. D., & Starkey, K. (1994). The effect of organizational culture on communication and information. *Journal of Management Studies, 31*(6), 807-828.

Bucel, B., & Raub, S. (2002). Building knolwedge-creating value networks. *European Management Journal, 20*(6), 587-596.

Bunstorf, G. (2003). Processes of knowledge sharing: from cognitive psychology to ecomonics. In E. Helmstadter (Ed.), *The Economics of Knowledge Sharing : A New Institutional Approach*. Cheltenham, UK: Edward Elgar.

Cabrera, A., & Cabrera, E. F. (2002). Knowledge-Sharing Dilemmas. *Organization Studies, 23*(5), 687-710.

Cabrera, A., Collins, W., & Salgado, J. (2006). Determinants of individual engagement in knowledge sharing. *International Journal of Human Resource Management, 17*(2), 245-264.

Cabrera, E. F., & Cabrera, A. (2005). Fostering knowledge sharing through people management practices. *The International Journal of Human Resource Management, 16*(5), 720-735.

Carter, C., & Scarbrough, H. (2001). Towards a second generation of KM? The people management challenge *Education & Training, 43*(4/5), 215-224.

Cavana, R., Delahaye, B., & Sekaran, U. (2001). *Applied business research: qualitative and quantitative methods*. Queensland: John Wiley & Sons.

Chen, C.-J., & Huang, J.-W. (2009). Strategic human resource practices and innovation performance -- The mediating role of knowledge management capacity. *Journal of Business Research, 62*(1), 104-114.

Chiu, C.-M., Hsu, M.-H., & Wang, E. T. G. (2006). Understanding knowledge sharing in virtual communities: An integration of social capital and social cognitive theories. *Decision Support Systems, 42*(3), 1872-1888.

Chong, C. W., Holden, T., Wilhelmij, P., & Schmidt, R. A. (2000). Where does knowledge management add value? *Journal of Intellectual Capital, 1*(4), 366-380.

Choo, C. W. (2000). Working with knowledge: How information professionals help organisations manage what they know. *Library Management, 21*(8), 395-403.

Chuan, C. L. (2006). Sample size estimation using Krejcie and Morgan and Cohen Statistical Power Analysis: A comparison. *Jurnal Penyelidikan IPBL, 7*, 78-86.

Churchill, G. A., Jr. (1979). A Paradigm for Developing Better Measures of Marketing Constructs. *Journal of Marketing Research, 16*(1), 64-73.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.): Lawrence Erlbaum.

Cohen, W. M., & Levinthal, D. A. (1990). Absorptive Capacity : A New Perspective on Learning and Innovation. *Administrative Science Quarterly, 35*, 128-152.

Collins, C. J., & Smith, K. G. (2006). Knowledge exchange and combination: The role of human resource practices in the performance of high-technology firms. *Academy Of Management Journal, 49*(3), 544-560.

Colquitt, J. A., Scott, B. A., & LePine, J. A. (2007). Trust, trustworthiness, and trust propensity: A meta-analytic test of their unique relationships with risk taking and job performance. *Journal of Applied Psychology, 92*(4), 909-927.

Conner, K. R., & Prahalad, C. K. (1996). A Resource-Based Theory of the Firm: Knowledge Versus Opportunism. *Organization Science, 7*(5), 477-501.

Cook, J., & Wall, T. (1980). New work attitude measures of trust, organisational commitment and personal need non-fulfilment. *Journal of Occupational Psychology, 53*(1), 39-52.

Cook, J. D., Hepworth, S. J., Wall, T. D., & Warr, P. B. (1981). *The Experience of Work : A Compedium and Review of 249 Measures and their Use*. London: Acedemic Press Inc.

Cooke, R. A., & Rousseau, D. M. (1988). Behavioral Norms and Expectations: A Quantitative Approach To the Assessment of Organizational Culture. *Group Organization Management, 13*(3), 245-273.

Cummings, J. (2003). *Knowledge Sharing: A review of the literature*. Washington , D.C.: The world bank operations evaluation department.

Cummings, J. L., & Teng, B.-S. (2003). Transferring R&D knowledge: the key factors affecting knowledge transfer success. *Journal of Engineering and Technology Management, 20*(1-2), 39-68.

Cummings, J. L., & Teng, B.-S. (2006). The keys to successful knowledge sharing. *Journal of General Management, 31*(4), 1-18.

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.

Darroch, J. (2003). Developing a measure of knowledge management behaviours and practices. *Journal of Knowledge Management, 7*(5), 41-54.

Davenport, T. H., & Prusak, L. (1998). *Working Knowledge: How organizations manage what they know*. Boston: Harvard Business School Press.

Davenport, T. H., & Prusak, L. (2000). *Working knowledge: How organisations manage what they know*. Boston, Massachusetts: Harvard Business School Press.

Daymon, C. (2000). Culture formation in a new television station: A multi-perspective analysis. *British Journal of Management, 11*(2), 121-135.

De Long, D. W., & Fahey, L. (2000). Diagnosing cultural barriers to knowledge management. *Academy of Management Executive, 14*(4), 113-127.

De Saa-Perez, P., & Garcia-Falcon, J. M. (2002). A resource-based view of human resource management and organisational capabilities development. *The International Journal of Human Resource Management, 13*(1), 123 - 140.

Denison, D. R. (1996). What is the difference between organizational culture and organizational climate? A native's point of view on a decade of paradigm wars. [Article]. *Academy of Management Review, 21*(3), 619-654.

Denyer, D., & Tranfield, D. (2009). Producing a systematic review. In D. A. Buchanan & A. Bryman (Eds.), *The SAGE handbook of organisational research methods* (pp. 671-689). London: SAGE Publications Ltd.

DeVellis, R. F. (2003). *Scale Development: Theory and Applications* (2nd ed.). Thousand Oaks, California, USA: SAGE Publications Inc.

Edvinsson, L., & Sullivan, P. (1996). Developing a model for managing intellectual capital. *European Management Journal, 14*(4), 356-364.

Evers, V., & Day, D. (1997). The role of culture in interface acceptance. In S. Howard, J. Hammond & G. Lindegaard (Eds.), *Human computer interaction, Interact '97*. London: Champman and Hall.

Field, A. (2005). *Discovering statistics using SPSS: (and sex, drugs and rock 'n' roll)* (2nd ed.). London: SAGE Publication.

Foss, N. J. (2007). The Emerging Knowledge Governance Approach: Challenges and Characteristics. *Organization, 14*(1), 29-52.

Foss, N. J., Husted, K., & Michailova, S. (2010). Governing knowledge sharing in organizations: Levels of analysis, governance mechanisms, and research directions. *Journal of Management Studies, 47*(3), 455-482.

Foss, N. J., & Minbaeva, D. B. (2009). Governing knowledge: The strategic human resource management dimension. *Center for Strategic Management and Globalization Working Paper No. SMG WP, 3*, 2009.

Foss, N. J., Minbaeva, D. B., Pedersen, T., & Reinholt, M. (2009). Encouraging knowledge sharing among employees: How job design matters. *Human Resource Management, 48*(6), 871-893.

Garland, R. (1991). The mid-point on a rating scale: Is it desirable. *Marketing Bulletin, 2*, 66-70.

Gold, A. H., Malhotra, A., & Segars, A. H. (2001). Knowledge management: An organizational capabilities perspectives. *Journal of Management Information Systems, 18*(1), 185-214.

Gooderham, P., Minbaeva, D. B., & Pedersen, T. (2011). Governance mechanisms for the promotion of social capital for knowledge transfer in multinational corporations. *Journal of Management Studies, 48*(1), 123-150.

Gorsuch, R. L. (1983). *Factor Analysis* (Second ed.). Hillsdale, New Jersey, USA: Lawrence Erlbaum Associates, Inc.

Grandori, A. (2001). Neither Hierarchy nor Identity: Knowledge-Governance Mechanisms and the Theory of the Firm. *Journal of Management and Governance, 5*(3), 381-399.

Grant, R. M. (1996). Toward a knowledge-based theory of the firm. *Strategic Management Journal, 17*(Winter Special Issue), 109-122.

Greengard, S. (1998). Storing, Shaping and Sharing Collective Wisdom. *Workforce, 77*(10), 82-88.

Gupta, A. K., & Govindarajan, V. (2000). Knowledge flows within multinational corporations. *Strategic Management Journal, 21*(4), 473-496.

Gupta, B., Iyer, L. S., & Aronson, J. E. (2000). Knowledge management: practices and challenges. *Industrial Management & Data Systems, 100*(1-2), 17-21.

Hackman, J. R., & Oldham, G. R. (1975). Development of the Job Diagnostic Survey. *Journal of Applied Psychology, 60*, 159-170.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis: A global perspectives* (7th ed.). Upper Saddle River, N.J. USA: Pearson Education.

Hall, H. (2001). Input-friendliness: motivating knowledge sharing across intranets. *Journal of Information Science, 27*(3), 139-146.

Hall, R. (1992). The Strategic Analysis of Intangible Resources. *Strategic Management Journal, 13*(2), 135-144.

Hansen, M. T. (1999). The search-transfer problem: The role of weak ties in sharing knowledge across organization subunits. *Administrative Science Quarterly, 44*(1), 82-112.

Hansen, M. T., Mors, M. L., & Lovas, B. (2005). Knowledge sharing in organizations: Multiple networks, multiple phases. *Academy of Management Journal, 48*(5), 776-793.

Hansen, M. T., Nohria, N., & Tierney, T. (1999). What's your strategy for managing knowledge? *Harvard Business Review, 77*(2), 106-115.

Hayton, J. C., Allen, D. G., & Scarpello, V. (2004). Factor Retention Decisions in Exploratory Factor Analysis: a Tutorial on Parallel Analysis. *Organizational Research Methods, 7*(2), 191-205.

Helmstadter, E. (2003). The institutional economics of knowledge sharing: basic issues. In E. Helmstadter (Ed.), *The Economics of Knowledge Sharing: A New Institutional Approach*. Cheltenham, UK: Edward Elgar.

Hendriks, P. (1999). Why share knowledge? The influence of ICT on the motivation for knowledge sharing. *Knowledge and Process Management, 6*(2), 91-100.

Hertog, J. F. d., & Huizenga, E. (2000). *The knowledge enterprise: implementation of intelligent business strategies*. London, UK: Imperial College Press; River Edge, NJ.

Hiltrop, J.-M. (1999). The quest for the best: human resource practices to attract and retain talent. *European Management Journal, 17*(4), 422-430.

Hislop, D. (2002). *Managing knowledge and the problem of commitment*. Paper presented at the 3rd European Conference on Organisational Knowledge, Learning and Capabilities, Athens.

Hislop, D. (2003). Linking human resource management and knowledge management via commitment: A review and research agenda. *Employee Relations, 25*(2), 182 - 202.

Hofstede, G. H., & Hofstede, G. J. (2004). *Cultures and Organizations:Software of the mind*. London: McGraw-Hill.

Holsapple, C. W., & Joshi, K. D. (2003). A knowledge management ontology. In C. W. Holsapple (Ed.), *Handbook on knowledge management 1 : Knowledge matters*. Berlin Heidelberg, Germany: Springer-Verlag.

Hooff, B. v. d., & Weenen, f. d. L. v. (2004). Committed to share: commitment and CMC use as antecedents of knowledge sharing. *Knowledge and Process Management, 11*(1), 13-24.

Hsu, B.-F., Chen, W.-Y., Wang, M.-L., & Yu, H.-Y. (2007, 5-9 August 2007). *How human resource practices impact knowledge sharing in R&D teams.* Paper presented at the PICMET, Portland, Oregon, USA.

Hsu, I.-C. (2006). Enhancing employee tendencies to share knowledge-case studies of nine companies in Taiwan. *International Journal of Information Management, 26*, 326-338.

Hsu, I.-C. (2008). Knowledge sharing practices as a facilitating factor for improving organizational performance through human capital: A preliminary test. *Expert Systems with Applications, 35*(3), 1316-1326.

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.

Hughes, J. C., & Rog, E. (2008). Talent management: A strategy for improving employee recruitment, retention and engagement within hospitality organisations. *International Journal of Contemporary Hospitality Management, 20*(7), 743-757.

Huselid, M. A. (1995). The impact of human resource management practices on turnover, productivity, and corporate financial performance. *The Academy of Management Journal, 38*(3), 635-672.

Hussein, R., Abdul Karim, N. S., Mohamed, N., & Ahlan, A. R. (2007). The influence of organisational factors on information systems success in e-government agencies in Malaysia. *The Electronic Journal on Information Systems in Developing Countries, 29*(1), 1-17.

Igbaria, M., Guimaraes, T., & Davis, G. B. (1995). Testing the Determinants of Microcomputer Usage via a Structural Equation Model. *Journal of Management Information Systems, 11*(4), 87-114.

Ipe, M. (2003). Knowledge Sharing in Organizations: A Conceptual Framework. *Human Resource Development Review, 2*(4), 337-359.

Janz, B. D., Colquitt, J. A., & Noe, R. A. (1997). Knowledge worker team effectiveness: The role of autonomy, interdependence, team development, and contextual support variables. *Personnel Psychology, 50*(4), 877-904.

Janz, B. D., & Prasarnphanich, P. (2003). Understanding the antecedents of effective knowledge management: The importance of a knowledge-centered culture. *Decision Sciences, 34*(2), 351-384.

Javidan, M., & Carl, D. E. (2004). East meets west: A cross-cultural comparison of charismatic leadership among Canadian and Iranian executive. *Journal of Management Studies, 41*(4), 667-691.

Kakabadse, N. K., Kakabadse, A., & Kouzmin, A. (2003). Reviewing the knowledge management literature: towards a taxonomy. *Journal of Knowledge Management, 7*(4), 75-91.

Kankanhalli, A., Tan, B. C. Y., & Wei, K.-K. (2005). Contributing knowledge to electronic knowledge repositories: an empirical investigation. *MIS Quarterly, 29*(1), 113-143.

Kaser, P. A. W., & Miles, R. E. (2002). Understanding knowledge activists' successes and failures. *Long Range Planning, 35*(1), 9-28.

Kelloway, E. K., & Barling, J. (2000). Knowledge work as organisational behavior. *International Journal of Management Reviews, 2*(3), 287-304.

Kemp, J. L. C., Moerman, P. A., & Prieto, J. (2001, 27-29 June). *On the nature of knowledge-intensive organisations: Strategy and organisation in the new economy.* Paper presented at the 7th International Conference on Concurrent Enterprise, Bremen, Germany.

Kennedy, J. C. (2002). Leadership in Malaysia: Traditional values, international outlook. *The Academy of Management Executive, 16*(3), 15-26.

Keyton, J. (2005). *Communication and organizational culture: A key to understanding work experiences*. Thousand Oaks: Sage Publications.

Khan, I. U., Usoro, A., & Majewski, G. (2010). An organisational culture model for comparative studies: A conceptual view. *International Journal of Global Business, 3*(1), 53-82.

Kim, L. (2001). Absorptive Capacity, Co-operation, and Knowledge Creation:Samsung's Leapfrogging in Semiconductors. In I. Nonaka & T. Nishiguchi (Eds.), *Knowledge Emergence:Social, Technical, and*

Evolutionary Dimensions of Knowledge Creation (pp. 270-286): Oxford:Oxford University Press.

Kim, S., & Lee, H. (2006). The impact of organisational context and information technology on employee knowledge-sharing capabilities. *Public Administration Review, 66*(3), 370-385.

Kogut, B., & Zander, U. (1992). Knowledge of the firm, combinative capabilities, and the replication of technology. *Organization Science, 3*(3), 383-397.

Kostova, T. (1999). Transnational transfer of strategic organizational practices: a contextual perspective. *The Academy of Management Review, 24*(2), 308-324.

Krejcie, R. V., & Morgan, D. M. (1970). Determining Sample Size for Research Activities. *Educational & Psychological Measurement, 30*(3), 607-610.

Kwok, S. H., & Gao, S. (2005). Attitude towards knowledge sharing behavior. *Journal of Computer Information Systems, 46*(2), 45-51.

Lado, A. A., & Wilson, M. C. (1994). Human Resource Systems and Sustained Competitive Advantage: A Competency-Based Perspective. *The Academy of Management Review, 19*(4), 699-727.

Lank, E. (1997). Leveraging invisible assets: the human factor. *Long Range Planning, 30*(3), 406-412.

Lee, H., & Choi, B. (2003). Knowledge management enablers, processes, and organizational performance: An integrative view and empirical examination. *Journal of Management Information Systems, 20*(1), 179-228.

Lee, J.-N. (2001). The impact of knowledge sharing, organizational capability and partnership quality on IS outsourcing success. *Information & Management, 38*(5), 323-335.

Leidner, D. E., Alavi, M., & Kayworth, T. R. (2006). The role of culture in knowledge management: A case study of two global firms. *International Journal of e-Collaboration, 2*(1), 17-40.

Levin, D. Z., & Cross, R. (2004). The strength of weak ties you can trust: The mediating role of trust in effective knowledge transfer. *Management Science, 50*(11), 1477-1490.

Liao, S. H., Fei, W. C., & Chen, C. C. (2007). Knowledge sharing, absorptive capacity, and innovation capability: an empirical study of Taiwan's knowledge-intensive industries. *Journal of Information Science, 33*(3), 340-359.

Lim, D., & Klobas, J. (2000). Knowledge management in small enterprise. *The Electronic Library, 18*(6), 420-432.

Lin, H.-F. (2007). Effects of extrinsic and intrinsic motivation on employee knowledge sharing intentions. *Journal of Information Science, 33*(2), 135-149.

Lok, P., & Crawford, J. (2004). The effect of organisational culture and leadership style on job satisfaction and organisational commitment. *Journal of Management Development, 23*(4), 321-338.

MacInnis, D. J., Moorman, C., & Jaworski, B. J. (1991). Enhancing and measuring consumers' motivation, opportunity, and ability to process brand information from ads. *The Journal of Marketing, 55*(4), 32-53.

Malhotra, Y. (2003). Why knowledge management systems fails: Enablers and constraints of knowledge management in human enterprises. In C. W. Holsapple (Ed.), *Handbook on Knowledge Management 1: Knowledge Matters*. Germany: Springer.

Martensson, M. (2000). A critical review of knowledge management as a management tool. *Journal of Knowledge Management, 4*(3), 204-216.

Martin, J. (2002). *Organizational culture: Mapping the terrain*. Thousands Oaks, California: Sage Publications.

Matusik, S. F., & Hill, C. W. L. (1998). The utilization of contingent work, knowledge creation, and competitive advantage. *The Academy of Management Review, 23*(4), 680-697.

Mayo, A. (2000). The role of employee development in the growth of intellectual capital. *Personnel Review, 29*(4), 521-533.

McCown, R. A., Bowen, U., Huselid, M. A., & Becker, B. E. (1999). Strategic human resource management at Herman Miller. *Human Resource Management, 38*, 303-308.

McDermott, R., & O'Dell, C. (2001). Overcoming cultural barriers to sharing knowledge. *Journal of Knowledge Management, 5*(1), 76-85.

MDeC (2009). Multimedia Development Corporation Websites (MDeC) Retrieved 18 July, 2009, from www.mdec.my

MDeC (2010). MSC Malaysia Status Companies Performance Indicators: MSC Malaysia Impact Survey 2008 Retrieved 15 December, 2010, from www.mscmalaysia.my

Meek, V. L. (1988). Organizational Culture: Origins and Weaknesses. *Organization Studies, 9*(4), 453-473.

Menkhoff, T., Wah, C. Y., Hoong, L. C., & Evers, H.-D. (2008). *Knowledge Sharing in Multicultural Singapore - A Challenge for Governance?* Paper presented at the Knowledge Architectures for Development-Challenges Ahead for Asian Business and Governance, Lee Kong Chian School of Business, Singapore Management University.

Merriam, S. B., & Mohamad, M. (2000). How cultural values shape learning in older adulthood: The case of Malaysia. *Adult Education Quarterly, 51*(1), 45-63.

Meyerson, D., & Martin, J. (1987). Cutural change: An integration of three different views. *Journal of Management Studies, 24*(6), 623-647.

Minbaeva, D. B. (2005). HRM practices and MNC knowledge transfer. *Personnel Review, 34*(1), 125-144.

Minbaeva, D. B. (2008). HRM practices affecting extrinsic and intrinsic motivation of knowledge receivers and their effect on ontra-MNC knowledge transfer. *International Business Review, 17*(6), 703-713.

Minbaeva, D. B., Pedersen, T., Bjorkman, I., Fey, C., & Park, H. (2003). MNC knowledge transfer, subsidiary absorptive capacity, and HRM. *Journal of International Business Studies, 34*, 586-599.

Misra, D. C., Hariharan, R., & Khaneja, M. (2003). E-Knowledge Management Framework for Government Organizations. *Information Systems Management, 20*(2), 38 - 48.

Mooradian, T., Renzl, B., & Matzler, K. (2006). Who Trusts? Personality, Trust and Knowledge Sharing. *Management Learning, 37*(4), 523-540.

Morris, T. (2001). Knowledge codification in the professional service firm. *Human Relations, Special Issue on Knowledge Management in Professional Service Firms, 54*(7), 819-838.

Nahapiet, J., & Ghoshal, S. (1998). Social capital, intellectual capital, and the organisational advantage. *Academy of Management Review, 23*(2), 242-266.

Nayir, D. Z., & Uzuncarsili, U. (2008). A cultural perspective on knowledge management: the success story of Sarkuysan company. *Journal of Knowledge Management, 12*(2), 141-155.

Nevis, E. C., DiBella, A. J., & Gould, J. M. (1995). Understanding organisations as learning systems. *Sloan Management Review, 36*(2), 73-85.

Ngah, R., Chua, H. H., & Ibrahim, A. R. (2009). The relationship between knowledge management and trust: Malaysian perspective. *International Journal of Management Innovation Systems, 1*(1), 1-11.

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

Nonaka, I., & Takeuchi, H. (1995). *The Knowledge-Creating Company: How Japanese Companies Create the Dynamic of Innovation*. New York: Oxford University Press.

Nooteboom, B. (2000). Learning by Interaction: Absorptive Capacity, Cognitive Distance and Governance. *Journal of Management and Governance, 4*, 69-92.

Nunnally, J. C. (1978). *Psychometric theory* (2nd ed.). New York: McGraw-Hill.

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-+.

Okoli, C., & Oh, W. (2007). Investigating recognition-based performance in an open content community: A social capital perspective. *Information & Management, 44*(3), 240-252.

Olomolaiye, A., & Egbu, C. (2006, 7-8 September). *Linking human resources management and knowledge management for performance improvements: A case study approach.* Paper presented at the The construction and building research conference of the Royal Institute of Charted Surveyors (COBRA 2006), University College London.

Oltra, V. (2005). Knowledge managment effectiveness factors: the role of HRM. *Journal of Knowledge Management, 9*(4), 70-86.

Osterloh, M., & Frey, B. S. (2000). Motivation, Knowledge Transfer, and Organizational Forms. *Organization Science, 11*(5), 538-550.

Pallant, J. (2007). *SPSS survival manual: a step-by-step guide to data analysis using SPSS for Windows (version 15)* (3rd ed.). NSW, Australia: Allen & Unwin.

Parnell, J. A., & Bell, E. D. (1994). The Propensity for Participative Decision Making Scale. *Administration & Society, 25*(4), 518-530.

Pett, M. A., Lackey, N. R., & Sullivan, J. J. (2003). *Making sense of factor analysis: the use of factor analysis for instrument development in health care research*. Thousand Oaks, California: Sage Publication.

Pettigrew, A. M. (1979). On studying organizational cultures. *Administrative Science Quarterly, 24*(4), 570-581.

Porter, M. E. (1980). *Competitive strategy:Techniques for analyzing industries and competitors*. New York: Free Press.

Porter, M. E. (1983). *Cases in competitive strategy*. New York: Free Press.

Posner, B. Z., & Munson, J. M. (1979). The importance of values in understanding organisational behavior. *Human Resource Management, 18*(3), 9-14.

Prichard, C. (2000). *Managing knowledge: critical investigations of work and learning*: Macmillan Business.

Quaddus, M., & Hofmeyer, G. (2007). An investigation into the factors influencing the adoption of B2B trading exchanges in small businesses. *European Journal of Information Systems, 16*(3), 202-215.

Quigley, N. R., Tesluk, P. E., Locke, E. A., & Bartol, K. M. (2007). A multilevel investigation of the motivational mechanisms underlying knowledge sharing and performance. *Orgnaization Science, 18*(1), 71-88.

Quinn, R. E., & Rohrbaugh, J. (1981). A competing values approach to organizational effectiveness. *Public Productivity Review, 5*(2), 122-140.

Quinn, R. E., & Rohrbaugh, J. (1983). A spatial model of effectiveness criteria: Towards a competing values approach to organizational analysis. *Management Science, 29*(3), 363-377.

Renzl, B. (2008). Trust in management and knowledge sharing: The mediating effects of fear and knowledge documentation. *OMEGA - The International Journal of Management Science, 36*(2), 206-220.

Reus, T. H. (2004). *A knowledge-based view of international acquisition performance.* The Florida State University, Florida, USA.

Robbins, S.P., Judge, T.A., Millett, B., & Boyle, M. (2011). *Organisational Behaviour* (Sixth ed.). Frenchs Forest NSW: Pearson Australia.

Robertson, M., & Hammersley, G. O. M. (2000). Knowledge management practices within a knowledge-intensive firm: the significance of the people management dimension. *Journal of European Industrial Training, 24*(2/3/4), 241-253.

Robertson, M., & Swan, J. (2003). 'Control - what control?' culture and ambiguity within a knowledge intensive firm. *Journal of Management Studies, 40*(4), 831-858.

Rowe, C. (1995). Clarifying the use of competence and competency models in recruitment, assessment and staff development. *Industrial and Commercial Training, 27*(11), 12-17.

Ruppel, C. P., & Harrington, S. J. (2001). Sharing knowledge through intranets: A study of organizational culture and intranet implementation. *Ieee Transactions on Professional Communication, 44*(1), 37-52.

Scarbrough, H. (1999). Knowledge as work: Conflicts in the management of knowledge workers. *Technology Analysis and Strategic Management, 11*(1), 5-16.

Scarbrough, H. (2003). Knowledge management, HRM and the innovation process. *International Journal of Manpower, 24*(5), 501-516.

Schein, E. H. (1985). *Organizational Cultures and Leadership*. San Francisco, CA: Jossey-Bass.

Schein, E. H. (1992). *Organizational Culture and Leadership* (2nd ed.). San Francisco, CA: Jossey-Bass.

Schein, E. H. (2004). *Organizational Culture and Leadership* (3rd ed.). San Francisco, CA: Jossey-Bass.

Schermerhorn, J. R., Hunt, J. G., & Osborn, R. N. (2008). *Organisational Behaviour* (Tenth ed.). United States of America: John Wiley & Sons, Inc.

Schultze, U., & Leidner, D. E. (2002). Studying knowledge management in information systems research: Discourses and theoretical assumptions. [Article]. *MIS Quarterly, 26*(3), 213-242.

Selvarajah, C., & Meyer, D. (2008). One nation, three cultures: Exploring dimensions that relate to leadership in Malaysia. *Leadership & Organisation Development Journal, 29*(8), 693-712.

Shah Alam, S., Abdullah, Z., Amir Ishak, N., & Mohd Zain, Z. (2009). Assessing knowledge sharing behaviour among employees in SMEs: An empirical study. *International Business Research, 2*(2), 115-122.

Siemsen, E., Roth, A. V., & Balasubramanian, S. (2008). How motivation, opportunity, and ability drive knowledge sharing: The constraining-factor model. *Journal of Operations Management, 26*(3), 426-445.

Song, J. H. (2008). The effects of learning organization culture on the practices of human knowledge-creation: an empirical research study in Korea. *International Journal of Training & Development, 12*(4), 265-281.

Spector, P. E. (1992). *Summated rating scale construction: An introduction*. Newbury Park, California, USA: SAGE Publications, Inc.

Spender, J. C., & Grant, R. M. (1996). Knowledge and the firm: overview. *Strategic Management Journal, 17*(1), 5-9.

Stajkovic, A. D., & Luthans, F. (1998). Social cognitive theory and self-efficacy: Goin beyond traditional motivational and behavioral approaches. *Organizational Dynamics, 26*(4), 62-74.

Staples, D. S., & Webster, J. (2008). Exploring the effects of trust, task interdependence and virtualness on knowledge sharing in teams. *Information Systems Journal, 18*(6), 617-640.

Storey, J., & Barnett, E. (2000). Knowledge management initiatives: learning from failure. *Journal of Knowledge Management, 4*(2), 145-156.

Styhre, A. (2002). The knowledge-intensive company and the economy of sharing: rethinking utility and knowledge management. *Knowledge and Process Management, 9*(4), 228-236.

Sveiby, K.-E., & Simons, R. (2002). Collaborative climate and effectiveness of knowledge work - an empirical study. *Journal of Knowledge Management, 6*(5), 420-433.

Sveiby, K. E. (1997). *The New Organizational Wealth: Managing & Measuring Knowledge-Based Assets*. San Francisco: Berrett-Koehler Publishers, Inc.

Swart, J., & Kinnie, N. (2003). Sharing knowledge in knowledge-intensive firms. *Human Resource Management Journal, 13*(2), 60-75.

Szulanski, G. (1996). Exploring internal stickiness: Impediments to the transfer of best practice within the firm. *Strategic Management Journal, 17*, 27-43.

Szulanski, G. (2000). The process of knowledge transfer: A diachronic analysis of stickiness. *Organizational Behavior and Human Decision Processes, 82*(1), 9-27.

Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5 ed.). Boston: Pearson/Allyn & Bacon.

Trompenaars, F., & Hampden-Turner, C. (1998). *Riding the waves of culture: Understanding cultural diversity in global business*. NY, USA: McGraw-Hill.

Tsai, W., & Ghoshal, S. (1998). Social capital and value creation: The role of intrafirm networks. *The Academy of Management Journal, 41*(4), 464-476.

Tsui, E. (2003). Tracking the role and evolution of commercial knowledge management software. In C. W. Holsapple (Ed.), *Handbook on knowledge management 2 : Knowledge directions*. Heidelberg, Germany: Springer-Verlag Berlin.

Turban, E., Aronson, J. E., & Liang, T.-P. (2005). *Decision Support Systems and Intelligent Systems* (Seventh ed.). Upper Saddle River, New Jersey, USA: Pearson Prentice Hall.

Tyler, T. R., & Blader, S. L. (2001). Identity and Cooperative Behavior in Groups. *Group Processes & Intergroup Relations, 4*(3), 207-226.

Van Maanen, J., & Barley, S. R. (1985). Cultural organization: Fragments of a theory. In P. J. Frost, L. F. Moore, M. R. Louise, C. C. Lundberg & J. Martin (Eds.), *Organizational Culture* (pp. 31-54). Beverly Hills: Sage.

von Krogh, G. (1998). Care in knowledge creation. *California Management Review, 40*(3), 133-153.

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. M., & Faraj, S. (2005). Why should I share? Examining social capital and knowledge contribution in electronic networks of practice. *MIS Quarterly, 29*(1), 35-57.

Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal, 5*(2), 171-180.

Widen-Wulff, G., & Ginman, M. (2004). Explaining knowledge sharing in organizations through the dimensions of social capital. *Journal of Information Science, 30*(5), 448-458.

Willman, P., O'Creevy, M. P. F., Nicholson, G., & Soane, E. (2001). Knowing the risks: Theory and practice in financial market trading. *Human Relations, 54*(7), 887-910.

Wright, K. B. (2005). Researching internet based populations: Advantages and disadvantages of online survey research, online questionnaire authoring software packages, and web survey services. *Journal of Computer Mediated Communication, 10*(3). Retrieved from http://jcmc.indiana.edu/vol10/issue3/wright.html

Wright, P. M., Dunford, B. B., & Snell, S. A. (2001). Human resources and the resource based view of the firm. *Journal of Management, 27*(6), 701-721.

Wright, P. M., McMahan, G. C., & McWilliams, A. (1993). Human resources and sustained competitive advantage: A resource-based perspective. Retrieved from www.marshall.usc.edu/ceo

Yahya, S., & Goh, W.-K. (2002). Managing human resources toward achieving knowledge management. *Journal of Knowledge Management, 6*(5), 457 - 468.

Yang, J. T. (2008). Individual attitudes and organisational knowledge sharing. *Tourism Management, 29*(2), 345-353.

Zarrage, C., & Bonache, J. (2005). The impact of team atmosphere on knowledge outcomes in self-managed teams. *Organisational Studies, 26*(5), 661-681.

APPENDICES

APPENDIX A: QUESTIONNAIRE

Knowledge Sharing Success Survey

This study has been funded by:

Malaysian Government
www.mohe.gov.my

Universiti Teknologi MARA (UiTM)
www.uitm.edu.my

Researchers:

Associate Professor Paul Toulson
Dr David Tweed
Hayati Abdul Jalal

This project has been evaluated by peer review and judged to be low risk. Consequently, it has not been reviewed by one of the University's Human Ethics Committees. The researchers named above are responsible for the ethical conduct of this research. If you have any concerns about the conduct of this research that you wish to raise with someone other than the researchers, please contact Professor Sylvia Rumball, Assistant to Vice-Chancellor (Research Ethic), telephone (06) 350 5249, e-mail: humanethics@massey.ac.nz.

Knowledge sharing success survey

Section A : Demographic information. Please tick (√) your answer in the appropriate boxes

1) Gender

Male	☐ 1	Female	☐ 2

2) Age

Less than 26 years	☐ 1	41 – 45 years	☐ 5
26 – 30 years	☐ 2	46 – 50 years	☐ 6
31 – 35 years	☐ 3	More than 50 years	☐ 7
36 - 40 years	☐ 4		

3) Highest qualification

Doctor of Philosophy (PhD)	☐ 1	Diploma	☐ 4
Master's Degree	☐ 2	Other (please specify) _____	☐ 5
Bachelor's Degree or equivalent	☐ 3		

4) Number of years working in the organization

Less than 2 years	☐ 1	6 – 9 years	☐ 3
2 – 5 years	☐ 2	More than 10 years	☐ 4

5) In the organisation, you are engaged in the department related to :

Administration	☐ 1	Operation	☐ 3
Research & Development	☐ 2	Other (please specify) _____	☐ 4

6) Number of month(s) or year(s) working in the above department: _____

7) Position in the organisation

Manager	☐ 1	Clerk/Office assistance	☐ 3
Executive	☐ 2	Other (please specify) _____	☐ 4

8) Ethnic group

Bumiputra	☐ 1	Indian	☐ 3
Chinese	☐ 2	Other (please specify) _____	☐ 4

9) Preferred language to answer questionnaire

English	☐ 1
Bahasa Malaysia	☐ 2

Section B: Organisational culture

The following statements characterise your personal perception on the level of agreement or disagreement about the environment of your organisation. Please CIRCLE one answer for each statement that suits with your perception according to the given ranking.

Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
1	2	3	4	5	6

In my organisation…						
10. Employees are helpful	1	2	3	4	5	6
11. Employees are supportive	1	2	3	4	5	6
12. Rules and procedures are typically written	1	2	3	4	5	6
13. Employees make their own rules on the job	1	2	3	4	5	6
14. There is a willingness to accept future responsibility	1	2	3	4	5	6
15. Employees wish they could oversee the work of their co-workers	1	2	3	4	5	6
16. Employees are encouraged to suggest ideas for new opportunities	1	2	3	4	5	6
17. There is a willingness to collaborate across organisational units	1	2	3	4	5	6
18. Management is sincere in its attempts to understand employees' opinion	1	2	3	4	5	6
19. Employees are motivated to share knowledge in order to be known as an expert	1	2	3	4	5	6
20. Employees are encouraged to find new methods to perform a task	1	2	3	4	5	6
21. Employees are satisfied by the degree of collaboration	1	2	3	4	5	6
22. Employees feel that they will **NOT** be able to count on their co-workers to help them	1	2	3	4	5	6

Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
1	2	3	4	5	6

In my organisation…

23. Expertise expedites the flow of knowledge within the organisation	1	2	3	4	5	6
24. Contacts with our organisation are on a formal or planned basis	1	2	3	4	5	6
25. The job permits employees to decide on their own how to go about doing the work	1	2	3	4	5	6
26. Employees can ignore the rules and reach informal agreements to handle some situation	1	2	3	4	5	6
27. Employees put much value on taking risks even if that turns out to be a failure	1	2	3	4	5	6
28. There are many activities associated with employees' work that are **NOT** covered by formal procedures	1	2	3	4	5	6
29. Employees feel confident that the organisation will always try to treat them fairly	1	2	3	4	5	6
30. The job **DENIES** employees any chance to use their personal initiative or judgment in carrying out the work	1	2	3	4	5	6
31. The job is arranged so that employees **DO NOT** have the chance to do an entire piece of work from beginning to end	1	2	3	4	5	6
32. Employees want to share knowledge with their co-workers in order to gain recognition and status	1	2	3	4	5	6
33. If possible employees would **NOT** give their co-workers any influence over issues that are important to their successful completion of organisational tasks	1	2	3	4	5	6

Section C: Knowledge sharing capabilities

For this section we are interested in the employees' capability to share knowledge within organisation. Please CIRCLE one answer for each statement that suits your perception according to the given ranking.

Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
1	2	3	4	5	6

In my organisation…						
34. Employees have sufficient training and job rotation opportunities during their professional life	1	2	3	4	5	6
35. Employees have the knowledge base necessary to easily understand and apply transferred knowledge	1	2	3	4	5	6
36. Differences in basic work knowledge make discussions very difficult	1	2	3	4	5	6
37. The additional training and job rotation opportunities that employees have during their professional life are **LIMITED**	1	2	3	4	5	6
38. Employees **DO NOT** expect to stay with this organisation very much longer	1	2	3	4	5	6
39. Employees have little training and job rotation opportunities allocated during their professional life	1	2	3	4	5	6
40. Employees have thought seriously about leaving this organisation	1	2	3	4	5	6
41. The sender (source of knowledge) has the knowledge base necessary to easily understand how the receiver plans to use the transferred knowledge	1	2	3	4	5	6
42. If employees have their own way, they will continue working with this organisation	1	2	3	4	5	6

Section D: Knowledge sharing success

For this section please consider that now the knowledge has been transferred to the recipients. The following questions will characterise recipients' feelings about the knowledge that has been transferred to them. Please CIRCLE one answer for each statement that suits your perception according to the given ranking

Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
1	2	3	4	5	6

In my organisation…						
43. Employees feel a very high degree of personal ownership of this knowledge	1	2	3	4	5	6
44. Employees care about the implementation of this knowledge	1	2	3	4	5	6
45. Employees are proud to tell others that they are working with this knowledge	1	2	3	4	5	6
46. Employees have been inspired by this knowledge to do their very best performance	1	2	3	4	5	6
47. Employees are satisfied with the quality of the knowledge	1	2	3	4	5	6
48. Employees feel a sense of responsibility on how this knowledge can be used	1	2	3	4	5	6
49. Employees have developed an intimate understanding of this knowledge	1	2	3	4	5	6
50. Employees present this knowledge to their friends as important to the organisation's success	1	2	3	4	5	6
51. Employees feel that deciding to work with this knowledge is a great decision on their part	1	2	3	4	5	6
52. Employees are willing to put in a great deal of effort beyond that normally expected to help this knowledge transfer to be successful	1	2	3	4	5	6

Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
1	2	3	4	5	6

In my organisation…

53. Employees feel that there is very much to be gained personally by continuing to work with this knowledge	1	2	3	4	5	6
54. Employees feel that, for them, this (the transferred knowledge) is the best of all knowledge to work with	1	2	3	4	5	6
55. Employees are pleased that they learned this knowledge over other knowledge that they could have learned instead	1	2	3	4	5	6
56. Employees are satisfied with the quality of the knowledge transfer process	1	2	3	4	5	6
57. Employees resent the continued control that the source has over how to use this knowledge	1	2	3	4	5	6
58. Employees have been able to exercise a great deal of discretion about how this knowledge was transferred and how it is used	1	2	3	4	5	6
59. Employees have changed their satisfaction with the knowledge once they gained experience with this knowledge (transferred knowledge)	1	2	3	4	5	6
60. Employees have significantly invested their time, ideas, skills, and physical, psychological, and intellectual energies in this knowledge and the related transfer processes	1	2	3	4	5	6

61. If you would like to make any other comments about knowledge sharing in your organisation, please feel welcome to share these here:

_____
_____
_____
_____
_____
_____
_____
_____

Thank you very much for participating in this project.
I appreciate your time and effort!

Please return your completed questionnaire in the enclosed envelope

Please return to:

Hayati Abdul Jalal
Lot PT 3364, Kg. Tersusun Simpang Empat
32000 Sitiawan
PERAK

TINJAUAN KEJAYAAN PERKONGSIAN ILMU

Kajian penyelidikan ini telah dibiayai oleh:

Kerajaan Malaysia
www.mohe.gov.my

Universiti Teknologi MARA (UiTM)
www.uitm.edu.my

Penyelidik:

Profesor Madya Paul Toulson
Dr David Tweed
Hayati Abdul Jalal

Projek ini telah dinilai melalui penilaian sepakaran dan telah diklasifikasikan sebagai berisiko rendah. Oleh itu, ia tidak dinilai oleh mana-mana Ahli Jawatankuasa Etika Kemanusiaan Universiti. Para penyelidik yang nama mereka disenaraikan seperti di atas adalah bertanggungjawab terhadap perilaku etika bagi kajian ini. Sekiranya anda mempunyai sebarang kemusykilan berhubung dengan kajian ini dan ingin mengajukan pertanyaan kepada selain daripada para penyelidik yang disenaraikan di atas, sila hubungi Professor Sylvia Rumball, Penolong Naib Canselor (Etika penyelidikan), telefon (06) 350 5249, e-mail: humanethics@massey.ac.nz.

Tinjauan kejayaan perkongsian ilmu

Bahagian A : Maklumat demografi . Sila tanda (√) jawapan anda di dalam kotak-kotak yang berkenaan

1) Jantina			
Lelaki	☐1	Perempuan	☐2

2) Umur			
Kurang daripada 26 tahun	☐1	41 – 45 tahun	☐5
26 – 30 tahun	☐2	46 – 50 tahun	☐6
31 – 35 tahun	☐3	Lebih daripada 50 tahun	☐7
36 - 40 tahun	☐4		

3) Kelayakan tertinggi			
Doktor Falsafah (PhD)	☐1	Diploma	☐4
Ijazah Sarjana	☐2	Lain-lain (sila nyatakan) _____	☐5
Ijazah Sarjana Muda atau setaraf	☐3		

4) Bilangan tahun bekerja di organisasi			
Kurang daripada 2 tahun	☐1	6 – 9 tahun	☐3
2 – 5 tahun	☐2	Lebih daripada 10 tahun	☐4

5) Di dalam organisasi anda bekerja di dalam jabatan yang berkaitan dengan:			
Pentadbiran	☐1	Operasi	☐3
Penyelidikan & Pembangunan	☐2	Lain-lain (sila nyatakan) _____	☐4

6)Bilangan bulan atau tahun bekerja di jabatan yang dinyatakan di atas:	_____

7) Kedudukan di dalam organisasi			
Pengurus	☐1	Kerani/Pembantu pejabat	☐3
Eksekutif	☐2	Lain-lain (sila nyatakan) _____	☐4

8) Kumpulan etnik			
Bumiputra	☐1	India	☐3
Cina	☐2	Lain-lain (sila nyatakan) _____	☐4

9) Pilihan bahasa untuk menjawab kajiselidik

Bahasa Inggeris ☐1

Bahasa Malaysia ☐2

Bahagian B: Budaya organisasi

Pernyataan berikut menggambarkan persepsi peribadi anda mengenai persekitaran organisasi dengan turutan tahap setuju atau tidak setuju. Sila BULATKAN satu jawapan bagi setiap kenyataan yang bersesuian dengan nilaian persepsi anda.

Sangat Tidak Setuju	Tidak Setuju	Sedikit Tidak Setuju	Sedikit Setuju	Setuju	Sangat Setuju
1	2	3	4	5	6

Di dalam organisasi saya…						
10. Para pekerja saling bantu membantu	1	2	3	4	5	6
11. Para pekerja memberi sokongan	1	2	3	4	5	6
12. Undang-undang dan prosedur secara lazimnya adalah bertulis	1	2	3	4	5	6
13. Para pekerja membuat undang-undang mereka sendiri semasa bekerja	1	2	3	4	5	6
14. Terdapat keinginan untuk menerima tanggungjawab berkaitan masa hadapan	1	2	3	4	5	6
15. Para pekerja berharap bahawa mereka boleh memantau kerja rakan sekerja mereka	1	2	3	4	5	6
16. Para pekerja adalah digalakkan untuk mencadangkan idea bagi peluang baru	1	2	3	4	5	6
17. Terdapat keinginan untuk bekerjasama dengan unit lain di dalam organisasi	1	2	3	4	5	6
18. Pihak pengurusan ikhlas di dalam usaha untuk memahami pendapat para pekerja	1	2	3	4	5	6
19. Para pekerja bersemangat untuk berkongsi ilmu supaya dikenali sebagai pakar	1	2	3	4	5	6
20. Para pekerja adalah digalakkan untuk mencari kaedah baru bagi melaksanakan tugas	1	2	3	4	5	6
21. Para pekerja berpuashati dengan tahap kerjasama	1	2	3	4	5	6

Sangat Tidak Setuju	Tidak Setuju	Sedikit Tidak Setuju	Sedikit Setuju	Setuju	Sangat Setuju
1	2	3	4	5	6

22. Para pekerja merasakan bahawa mereka **TIDAK** boleh bergantung kepada rakan sekerja untuk membantu mereka	1	2	3	4	5	6
23. Kepakaran menjadi penggerak ilmu di dalam organisasi	1	2	3	4	5	6
24. Hubungan pihak luar dengan organisasi kami adalah rasmi atau terancang	1	2	3	4	5	6
25. Keadaan bertugas membenarkan para pekerja menentukan cara tersendiri bagi melaksanakan tugas	1	2	3	4	5	6
26. Para pekerja boleh mengabaikan undang-undang dan mencapai persetujuan secara tidak formal untuk menangani sebahagian situasi	1	2	3	4	5	6
27. Para pekerja meletakkan nilai yang tinggi dalam pengambilan risiko walaupun ia mungkin membawa kepada kegagalan	1	2	3	4	5	6
28. Terdapat banyak aktiviti yang berkaitan dengan tugasan para pekerja **TIDAK** termaktub dalam prosedur rasmi	1	2	3	4	5	6
29. Para pekerja berasa yakin bahawa organisasi akan selalu cuba untuk memperlakukan mereka secara adil	1	2	3	4	5	6
30. Keadaan bertugas **TIDAK** memberikan para pekerja sebarang peluang untuk menggunakan inisiatif atau pertimbangan sendiri di dalam menjalankan tugas	1	2	3	4	5	6
31. Keadaan bertugas telah diaturkan supaya pekerja **TIDAK** mempunyai peluang untuk melakukan setiap perincian kerja daripada awal sehingga akhir	1	2	3	4	5	6
32. Para pekerja berkeinginan untuk berkongsi ilmu dengan rakan sekerja mereka supaya mendapat pengiktirafan dan status	1	2	3	4	5	6

33. Sekiranya boleh dielak, para pekerja **TIDAK** akan mempengaruhi rakan sekerja atas isu penting yang melibatkan kejayaan mereka menyelesaikan tugas organisasi	1	2	3	4	5	6

Bahagian C: Keupayaan Perkongsian Ilmu

Untuk bahagian ini kami berminat di dalam kebolehan pekerja untuk berkongsi ilmu di dalam organisasi. Sila BULATKAN satu jawapan bagi setiap kenyataan yang bersesuian dengan persepsi anda mengikut nilaian yang telah diberikan

Sangat Tidak Setuju	Tidak Setuju	Sedikit Tidak Setuju	Sedikit Setuju	Setuju	Sangat Setuju
1	2	3	4	5	6

Di dalam organisasi saya…

34. Para pekerja mempunyai peluang latihan dan pusingan kerja yang mencukupi sepanjang hayat professional mereka	1	2	3	4	5	6
35. Para pekerja mempunyai ilmu asas yang cukup untuk memahami dan mengaplikasikan ilmu yang diperturunkan	1	2	3	4	5	6
36. Perbezaan di dalam ilmu asas kerja membuatkan perbincangan sangat sukar	1	2	3	4	5	6
37. Peluang latihan dan pusingan kerja tambahan untuk para pekerja sepanjang hayat professional mereka adalah **TERHAD**	1	2	3	4	5	6
38. Para pekerja **TIDAK** menjangkakan bahawa mereka akan terus bekerja dengan organisasi ini untuk waktu yang lebih lama lagi	1	2	3	4	5	6
39. Para pekerja **TIDAK** mempunyai banyak peruntukan untuk peluang latihan dan pusingan kerja sepanjang hayat prefesional mereka	1	2	3	4	5	6
40. Para pekerja telah berfikir secara serius untuk meninggalkan organisasi ini	1	2	3	4	5	6
41. Pekerja yang menurunkan ilmu (sumber ilmu) mempunyai asas ilmu yang cukup sebagai pemudahcara untuk si penerima ilmu merancang menggunakan ilmu tersebut	1	2	3	4	5	6

42. Jika para pekerja mempunyai pilihan tersendiri, mereka akan terus bekerja dengan organisasi ini	1	2	3	4	5	6

Bahagian D: Kejayaan perkongsian ilmu

Untuk bahagian ini sila anggap bahawa ilmu telah diturunkan kepada penerima ilmu. Soalan-soalan berikut akan menggambarkan perasaan si penerima ilmu tentang ilmu yang telah diperturunkan kepada mereka. Sila BULATKAN satu jawapan bagi setiap kenyataan yang bersesuian dengan persepsi anda mengikut nilaian yang telah diberikan

Sangat Tidak Setuju	Tidak Setuju	Sedikit Tidak Setuju	Sedikit Setuju	Setuju	Sangat Setuju
1	2	3	4	5	6

Di dalam organisasi saya…

43. Para pekerja merasakan bahawa tahap pemilikan peribadinya atas ilmu ini sangat tinggi	1	2	3	4	5	6
44. Para pekerja mengambil berat tentang penggunaan ilmu ini	1	2	3	4	5	6
45. Para pekerja merasa bangga untuk memberitahu orang lain bahawa mereka sedang mengaplikasikan ilmu ini	1	2	3	4	5	6
46. Para pekerja mendapat inspirasi melalui ilmu ini untuk memberikan prestasi kerja yang terbaik	1	2	3	4	5	6
47. Para pekerja berpuashati dengan kualiti ilmu	1	2	3	4	5	6
48. Para pekerja berasa bertanggungjawab atas bagaimana ilmu ini akan digunakan	1	2	3	4	5	6
49. Para pekerja telah membentuk kefahaman yang mendalam terhadap ilmu ini	1	2	3	4	5	6
50. Para pekerja bercerita perihal ilmu ini kepada rakan mereka sebagai sesuatu yang penting kepada kejayaan organisasi	1	2	3	4	5	6

51. Para pekerja merasakan bahawa merancang untuk bekerja dengan ilmu ini adalah satu keputusan yang besar	1	2	3	4	5	6
52. Para pekerja sanggup meletakkan usaha yang tinggi melampaui kebiasaan untuk menjayakan perpindahan ilmu	1	2	3	4	5	6
53. Para pekerja merasakan bahawa terdapat banyak manfaat peribadi yang boleh diperolehi dengan terus mengaplikasikan ilmu ini	1	2	3	4	5	6
54. Para pekerja merasakan bahawa bekerja dengan ilmu ini (ilmu yang telah dipindahkan) adalah yang terbaik berbanding dengan semua ilmu yang lain	1	2	3	4	5	6
55. Para pekerja gembira bahawa mereka telah mempelajari ilmu ini berbanding dengan ilmu yang lain yang boleh mereka pelajari	1	2	3	4	5	6
56. Para pekerja berpuashati dengan kualiti proses perpindahan ilmu	1	2	3	4	5	6
57. Para pekerja **TIDAK** menyukai kawalan yang berterusan atas cara menggunakan ilmu ini daripada sumber ilmu	1	2	3	4	5	6
58. Para pekerja boleh menggunakan pertimbangan mereka yang tinggi perihal bagaimana ilmu ini telah dipindahkan dan bagaimana ianya digunakan	1	2	3	4	5	6
59. Para pekerja telah mengubah rasa puashati mereka terhadap ilmu ini (ilmu yang telah dipindahkan) setelah mereka mendapat pengalaman dengannya	1	2	3	4	5	6
60. Para pekerja telah melaburkan banyak masa, idea, dan kemahiran, berserta tenaga fizikal, psikologi, dan intektual mereka di dalam ilmu ini dan proses berkaitan perpindahan ilmu	1	2	3	4	5	6

61. Sekiranya anda ingin mengemukakan sebarang komen perihal perkongsian ilmu di dalam organisasi anda, sila kongsikan pandangan anda di sini:

_____
_____
_____
_____
_____
_____
_____

Terima kasih di atas penyertaan anda di dalam projek ini.
Saya menghargai masa dan usaha anda!

Sila kembalikan kajiselidik yang telah dilengkapkan di dalam sampul surat yang disertakan

Sila kembalikan kepada:

Hayati Abdul Jalal
Lot PT 3364, Kg. Tersusun Simpang Empat
32000 Sitiawan
PERAK

APPENDIX B:
INFORMATION SHEET

MASSEY UNIVERSITY
COLLEGE OF BUSINESS
KAUPAPA WHAI PAKIHI

KNOWLEDGE SHARING SUCCESS SURVEY
INFORMATION FOR PARTICIPANTS

Hi! I'm Hayati Abdul Jalal. I am a student at Massey University, Palmerston North New Zealand, and am doing a research project for my postgraduate degree. I am conducting a survey of organisational knowledge sharing success in Malaysian context. The objective of this research is to investigate the relationship between organisational cultural values, knowledge sharing capabilities and knowledge sharing success in Malaysian knowledge intensive firms (KIFs). The study is needed to provide information that will increase our understanding of Malaysian knowledge management processes, human resources management and strengthen future development. We expect the results to help sector organisations and be useful to the individual and organisations that participate to understand more about what helps and hinders knowledge sharing, and what things can be done to improve the success of knowledge sharing within organisational context.

If you have been in employment for at least 1 year and have involved in creating new knowledge or developing innovations in the organisation, I'd love for you to take part!

The questionnaire will take approximately 20 – 30 minutes to complete and includes questions about:

- The knowledge sharing activities in your organisation.
- The organisational cultural values that support or hinder knowledge sharing.
- The ability of your organisation to develop social communities for encouraging knowledge sharing.
- The success of knowledge sharing activities in your organisation.

Many questions can be answered by simply circling the appropriate answer. In some questions you will need to write an answer in your own words. Please read the questions carefully. There are no right or wrong answers to any of these questions. Do not spend a lot of time on any particular question. **YOUR FIRST RESPONSE IS PROBABLY THE BEST ONE.**

You are under no obligation to accept this invitation and should not feel pressured to do so. If you do take part, you have the right to:

- *Decline to answer any particular questions;*
- *withdraw from the study at any time;*
- *ask any questions about the study at any time during participation;*
- *provide information on the understanding that your name will not be used unless you give permission to the researcher;and,*
- *be given access to a summary of the project findings when it is concluded*.

If you choose to complete the questionnaire, this means you have given your consent to take part in the study.

If your manager has agreed, you will be able to complete this during work time or in a lunch break. If you are not able to answer the questionnaire at work, you can complete it at a place in the community you are comfortable in at a time that suits you. Please return your completed questionnaire to me in the postage paid envelope attached.

For the purpose of this study, respondents are asked to use the following definitions when interpreting the questions:

Knowledge: The knowledge in the organisation includes information, beliefs, skills, paradigms, view points, intuitions, insights, hunches, experiences, values, written policies or procedures. The knowledge can be located in people's mind, electronic form or physical documents.

Knowledge sharing: Knowledge sharing can be seen as a process consisiting of employees' willingness to communicate their knowledge with others and to consult with others to learn from them.

Organisational culture: A set of shared meaning cultural elements includes communicating in the same language, wearing corporate attire or uniforms or sharing the same stories and ritual.

Knowledge sharing capability: The extent to which employees possess the ability, motivation and opportunity to share knowledge.

Knowledge sharing success: The degree of knowledge internalisation, the extent to which recipients obtain ownership of, have commitment to, and satisfaction with the shared knowledge.

The information you provide will be held in the strictest confidence at Massey University and will only be seen by those involved in the statistical analysis. The responses that you give will be put together with the responses of all the other people to form general results to ensure that no individual organisation can be identified. All information that will be able to identify you individually will be kept confidential.

Please feel free to contact any of us on the details below if you have any questions about the research or just to wish to know more!

Researcher's name	Telephone	Email
Hayati Abdul Jalal	017-2868872	H.AbdulJalal@massey.ac.nz
Supervisors' name	**Telephone**	**Email**
Assoc. Prof. Paul Toulson	**64 6 3505799 ext. 2389	P.Toulson@massey.ac.nz
Dr. David Tweed	**64 6 3505799 ext. 2805	D.Tweed@massey.ac.nz

This project has been evaluated by peer review and judged to be low risk. Consequently, it has not been reviewed by one of the University's Human Ethics Committees. The researchers named above are responsible for the ethical conduct of this research. If you have any concerns about the conduct of this research that you wish to raise with someone other than the researchers, please contact Professor Sylvia Rumball, Assistant to Vice-Chancellor (Research Ethic), telephone (06) 350 5249, e-mail: humanethics@massey.ac.nz.

APPENDIX C:
ETHICS APPROVAL

Massey University

OFFICE OF THE ASSISTANT
TO THE VICE-CHANCELLOR
(Research Ethics)
Private Bag 11 222
Palmerston North 4442
New Zealand
T 64 6 350 5573/350 5575
F 64 6 350 5622
humanethics@massey.ac.nz
animalethics@massey.ac.nz
gtc@massey.ac.nz
www.massey.ac.nz

30 September 2008

Hayati Jalal
6A College Street
PALMERSTON NORTH

Dear Hayati

Re: The Relationship between Organisational Values, Knowledge-Sharing Capabilities and Knowledge-Sharing Success in Malaysian Information Technology (IT) Companies

Thank you for your Low Risk Notification which was received on 29 September 2008.

Your project has been recorded on the Low Risk Database which is reported in the Annual Report of the Massey University Human Ethics Committees.

The low risk notification for this project is valid for a maximum of three years.

Please notify me if situations subsequently occur which cause you to reconsider your initial ethical analysis that it is safe to proceed without approval by one of the University's Human Ethics Committees.

Please note that travel undertaken by students must be approved by the supervisor and the relevant Pro Vice-Chancellor and be in accordance with the Policy and Procedures for Course-Related Student Travel Overseas. In addition, the supervisor must advise the University's Insurance Officer.

A reminder to include the following statement on all public documents:

> *"This project has been evaluated by peer review and judged to be low risk. Consequently, it has not been reviewed by one of the University's Human Ethics Committees. The researcher(s) named above are responsible for the ethical conduct of this research.*
>
> *If you have any concerns about the conduct of this research that you wish to raise with someone other than the researcher(s), please contact Professor Sylvia Rumball, Assistant to the Vice-Chancellor (Research Ethics), telephone 06 350 5249, e-mail humanethics@massey.ac.nz".*

Please note that if a sponsoring organisation, funding authority or a journal in which you wish to publish requires evidence of committee approval (with an approval number), you will have to provide a full application to one of the University's Human Ethics Committees. You should also note that such an approval can only be provided prior to the commencement of the research.

Yours sincerely

Sylvia Rumball

Sylvia V Rumball (Professor)
Chair, Human Ethics Chairs' Committee and
Assistant to the Vice-Chancellor (Research Ethics)

cc Assoc Prof Paul Toulson
Department of Management
PN214

Mr David Tweed
Department of Management
PN214

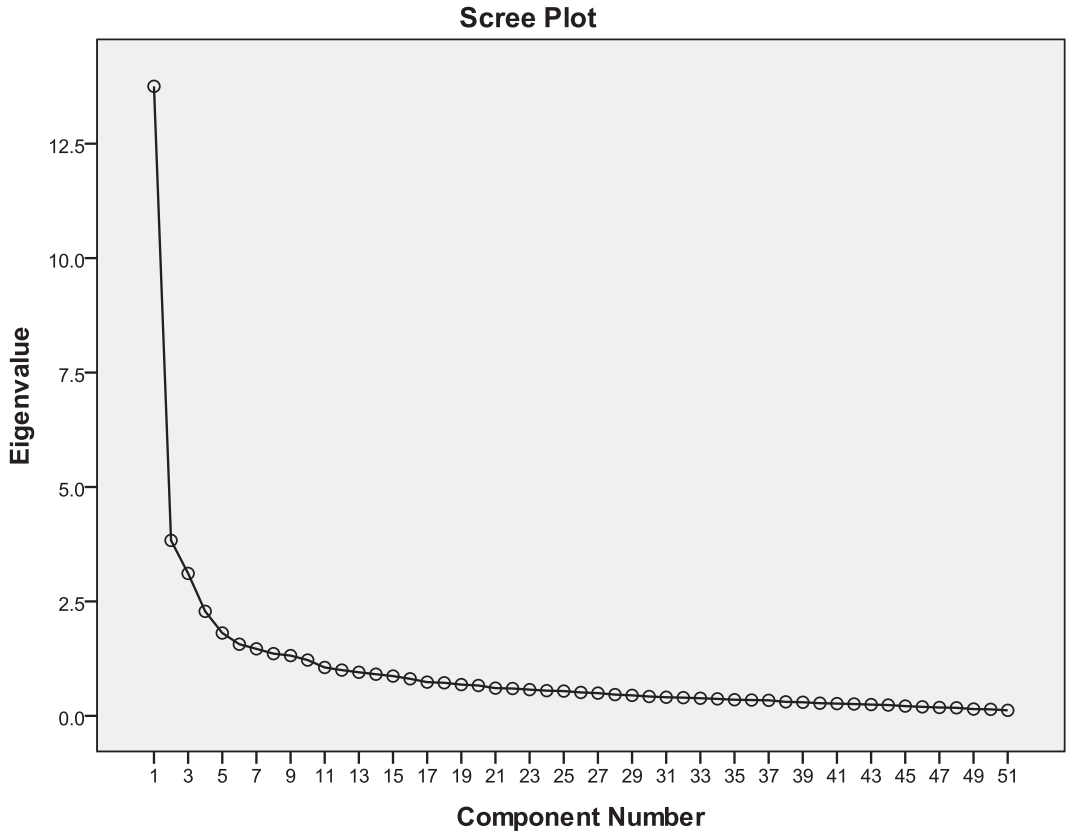
Prof Claire Massey, HoD
Department of Management
PN214

APPENDIX D:
FACTOR LOADINGS OF ITEMS BASED ON PRINCIPAL COMPONENT ANALYSIS (PCA)

FACTOR LOADINGS OF ITEMS BASED ON PRINCIPAL COMPONENT ANALYSIS (PCA)

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.895
Bartlett's Test of Sphericity	Approx. Chi-Square	7031.475
	df	1275
	Sig.	.000



Scree Plot for all items by Principal Component Analysis

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	13.752	26.966	26.966	13.752	26.966	26.966	9.537	18.701	18.701
2	3.833	7.515	34.481	3.833	7.515	34.481	3.550	6.961	25.661
3	3.112	6.101	40.582	3.112	6.101	40.582	3.354	6.576	32.237
4	2.284	4.478	45.060	2.284	4.478	45.060	2.714	5.322	37.559
5	1.810	3.549	48.609	1.810	3.549	48.609	2.345	4.597	42.156
6	1.565	3.069	51.678	1.565	3.069	51.678	2.086	4.091	46.247
7	1.464	2.871	54.548	1.464	2.871	54.548	2.006	3.932	50.179
8	1.359	2.665	57.214	1.359	2.665	57.214	1.949	3.822	54.001
9	1.317	2.582	59.796	1.317	2.582	59.796	1.945	3.814	57.816
10	1.219	2.390	62.186	1.219	2.390	62.186	1.785	3.500	61.316
11	1.057	2.073	64.260	1.057	2.073	64.260	1.501	2.944	64.260
12	1.000	1.960	66.220						
13	.952	1.867	68.087						
14	.910	1.784	69.870						
15	.869	1.705	71.575						
16	.809	1.587	73.162						
17	.737	1.445	74.607						
18	.723	1.417	76.024						
19	.683	1.339	77.363						
20	.663	1.300	78.664						
21	.606	1.188	79.851						
22	.598	1.172	81.023						
23	.573	1.124	82.147						
24	.550	1.079	83.226						
25	.541	1.061	84.288						
26	.512	1.003	85.291						
27	.497	.975	86.266						
28	.464	.911	87.177						
29	.448	.878	88.055						
30	.423	.830	88.884						
31	.407	.797	89.682						
32	.398	.780	90.462						
33	.385	.755	91.216						
34	.371	.727	91.944						
35	.353	.691	92.635						
36	.346	.678	93.313						
37	.340	.666	93.979						
38	.306	.600	94.580						
39	.297	.582	95.162						
40	.277	.543	95.705						
41	.268	.525	96.230						
42	.259	.507	96.737						
43	.247	.483	97.220						
44	.236	.464	97.684						
45	.213	.418	98.102						
46	.197	.387	98.489						
47	.183	.358	98.847						
48	.176	.345	99.192						
49	.149	.291	99.483						
50	.143	.280	99.763						
51	.121	.237	100.000						

Rotated Component Matrix[a]

	Component										
	1	2	3	4	5	6	7	8	9	10	11
Employees develop intimate understanding of knowledge	.792										
Employees care about implementation of this knowledge	.770										
Employees feel this knowledge is the best	.760										
Employees feel deciding to work this knowledge is great decision	.745										
Employees willing to put great effort beyond normally expected	.745										
Employees inspired by this knowledge to do best performance	.726										
Employees feel sense of responsibility on knowledge	.712										
Employees present this knowledge as important to org success	.704										
Employees satisfied with the quality of knowledge transfer process	.692										
Employees able to exercise great discretion	.687										
Employees pleased they learned over other knowledge	.686										
Employees satisfied with the quality of knowledge	.680										
Employees feel there is much to be gained by continuing	.678										
Employees feel high degree of ownership	.650										
Employees changed their satisfaction with this knowledge	.648										
Employees proud to tell others they working with this knowledge	.582			.454							

Continuation	Component										
	1	2	3	4	5	6	7	8	9	10	11
Employees have invested time skills in this knowledge and transfer processes	.458										
Contacts on planned or formal basis		.770									
Employees satisfied by the degree of collaboration		.708									
Employees supportive		.676									
Employees confident org will treat fairly		.614									
Employees encouraged to find new methods		.515									
Willingness to collaborate across org units		.480									
If employees have their own way, they will continue working with this organisation	.364		.717								
Employees have the knowledge base necessary to understand and apply			.699								
The sender has the knowledge base necessary to understand how the receiver plans to use			.685								
Employees have thought seriously about leaving this organisation			.608								
Differences in basic work knowledge make discussions very difficult			.506								
Employees have sufficient training and job rotation opportunity			.476								
Employees want to share knowledge to gain recognition				.801							
Employees resent the continued control that the source has over how to use knowledge				.768							
Employees put much value on taking risks				.659							

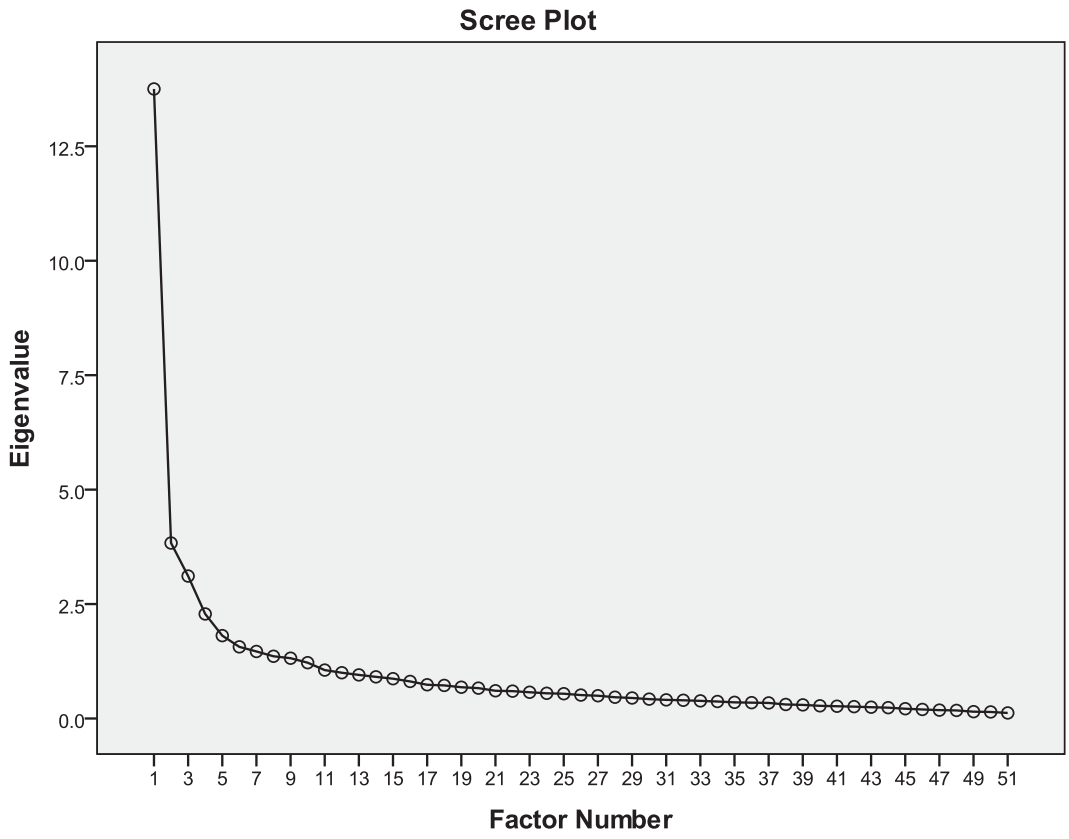
Continuation	Component										
	1	2	3	4	5	6	7	8	9	10	11
Job denies employees any chance to use personal initiative					.791						
Job arranged so that employees do not have chance to do entire work					.772						
If possible employees would not give co-worker any influence					.493						
Employees feel they will not able to count co-worker to help					.406						
Employees motivated to share knowledge to be known expert						.867					
Employees helpful						.818					
Employees can ignore rules and reach informal agreement							.732				
Job permits employees to decide on their own							-.717				
Activities not covered by formal procedures				-.377			.612				
Employees make own rules & procedures							.491				
Employees have little training and job rotation opportunity								.865			
The additional training and job rotation opportunities are limited								.692			
Employees wish could oversee work co-worker									.690		
Willingness to accept future responsibility									.655		
Expertise expedites flow information									.470		
Management sincere to understand employees' opinions										.601	
Rules procedures written										.458	
Employees do not expect to stay with this organisation very much longer										.354	
Employees encouraged to suggest idea											.528

APPENDIX E :
FACTOR LOADINGS OF ITEMS BASED ON PRINCIPAL AXIS FACTORING (PAF)

FACTOR LOADINGS OF ITEMS BASED ON PRINCIPAL AXIS FACTORING

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.895
Bartlett's Test of Sphericity	Approx. Chi-Square	7031.475
	df	1275
	Sig.	.000



Scree Plot for all items by Principal Axis Factoring

Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	13.752	26.966	26.966	13.332	26.142	26.142	9.142	17.925	17.925
2	3.833	7.515	34.481	3.390	6.648	32.789	3.394	6.654	24.580
3	3.112	6.101	40.582	2.709	5.311	38.101	3.050	5.979	30.559
4	2.284	4.478	45.060	1.850	3.628	41.729	2.337	4.583	35.142
5	1.810	3.549	48.609	1.349	2.646	44.375	1.978	3.878	39.021
6	1.565	3.069	51.678	1.126	2.209	46.583	1.793	3.515	42.536
7	1.464	2.871	54.548	1.095	2.147	48.730	1.509	2.959	45.494
8	1.359	2.665	57.214	.960	1.882	50.612	1.498	2.938	48.433
9	1.317	2.582	59.796	.830	1.627	52.239	1.461	2.864	51.297
10	1.219	2.390	62.186	.703	1.378	53.616	1.093	2.143	53.439
11	1.057	2.073	64.260	.647	1.269	54.886	.737	1.446	54.886
12	1.000	1.960	66.220						
13	.952	1.867	68.087						
14	.910	1.784	69.870						
15	.869	1.705	71.575						
16	.809	1.587	73.162						
17	.737	1.445	74.607						
18	.723	1.417	76.024						
19	.683	1.339	77.363						
20	.663	1.300	78.664						
21	.606	1.188	79.851						
22	.598	1.172	81.023						
23	.573	1.124	82.147						
24	.550	1.079	83.226						
25	.541	1.061	84.288						
26	.512	1.003	85.291						
27	.497	.975	86.266						
28	.464	.911	87.177						
29	.448	.878	88.055						
30	.423	.830	88.884						
31	.407	.797	89.682						
32	.398	.780	90.462						
33	.385	.755	91.216						
34	.371	.727	91.944						
35	.353	.691	92.635						
36	.346	.678	93.313						
37	.340	.666	93.979						
38	.306	.600	94.580						
39	.297	.582	95.162						
40	.277	.543	95.705						
41	.268	.525	96.230						
42	.259	.507	96.737						
43	.247	.483	97.220						
44	.236	.464	97.684						
45	.213	.418	98.102						
46	.197	.387	98.489						
47	.183	.358	98.847						
48	.176	.345	99.192						
49	.149	.291	99.483						
50	.143	.280	99.763						
51	.121	.237	100.000						

Rotated Component Matrix

Continuation	Factor										
	1	2	3	4	5	6	7	8	9	10	11
Employees have invested time skills in this knowledge and transfer processes	.464										
Employees do not expect to stay with this organisation very much longer	.353										
Contacts on planned or formal basis		.709									
Employees satisfied by the degree of collaboration		.648									
Employees supportive		.586									
Employees confident org will treat fairly		.547									
Employees encouraged to suggest idea		.507									
Employees encouraged to find new methods		.495									
Willingness to collaborate across org units		.418									
If employees have their own way, they will continue working with this organisation			.685								
Employees have the knowledge base necessary to understand and apply			.645								
The sender has the knowledge base necessary to understand how the receiver plans to use			.572								
Employees have thought seriously about leaving this organisation			.548								
Differences in basic work knowledge make discussions very difficult			.494								
Employees have sufficient training and job rotation opportunity			.452								
Employees want to share knowledge to gain recognition				.806							
Employees resent the continued control that the source has over how to use knowledge				.667							

Continuation	Factor										
	1	2	3	4	5	6	7	8	9	10	11
Employees put much value on taking risks				.603							
Job denies employees any chance to use personal initiative					.806						
Job arranged so that employees do not have chance to do entire work					.616						
If possible employees would not give co-worker any influence					.433						
Employees feel they will not able to count co-worker to help					.395						
Employees motivated to share knowledge to be known expert						.842					
Employees are helpful						.795					
Employees can ignore rules and reach informal agreement							.647				
Job permits employees to decide on their own							-.602				
Activities not covered by formal procedures							.528				
Employees make own rules & procedures							.404				
Employees have little training and job rotation opportunity								.875			
The additional training and job rotation opportunities are limited								.532			
Employees wish could oversee work co-worker									.532		
Willingness to accept future responsibility									.489		
Expertise expedites flow information										.405	
Rules procedures written										.365	
Management sincere to understand employees opinion											.502