

Abstract	ii
Abstrak	iv
Acknowledgements	vii
Table of Content	viii
List of Figure	xiii
List of Table	xv
List of Chart	xvi

CHAPTER ONE INTRODUCTION

1.1	Background of Study	1
1.2	Problem Statement	5
1.3	Aim of study	12
1.4	Research Objectives	14
1.5	Research Questions	14
1.6	Significance of the Study	15
1.7	Theoretical Contributions	16
1.8	Practical Contributions	17
1.9	Definition of variables	19
	1.9.1 Intellectual capital	19
	1.9.2 Knowledge sharing	19
	1.9.3 Innovation	21
	1.9.4 Organizational Performance	21
1.10	Summary	22
1.11	Organization of the thesis	22

CHAPTER 2
LITERATURE REVIEW

2.1	Introduction	26
2.2	Resource-Based Theory	26
2.2.1	Resource-Based Theory to framework	28
2.3	Organizational Resources	32
2.4	Intellectual Capital	35
2.4.1	Human Capital	54
2.4.2	Structural Capital	56
2.4.3	Relational Capital	57
2.4.4	Intellectual capital Studies	60
2.5	The Mediating Variables	67
2.5.1	Knowledge	69
2.5.2	Knowledge Sharing	71
2.5.3	Innovation	99
2.6	Organizational Performance	122
2.6.1	The Relationship between Intellectual Capital and Organizational Performance	126
2.6.2	The Relationship between Intellectual Capital and Knowledge Sharing	127
2.6.3	The Relationship between Knowledge Sharing and Organizational Performance	129
2.6.4	The Relationship between Innovation and Organizational Performance	131
2.6.5	The Relationship between Intellectual Capital, Knowledge Sharing and Organizational Performance	133
2.6.6	Intellectual Capital, Innovation and Organizational Performance	134
2.6.7	Intellectual Capital, Knowledge Sharing, Innovation and Organizational Performance	135
2.7	The Relationship between Intellectual Capital and Innovation	138
2.8	The Relationship between Knowledge sharing and Innovation	146
2.9	Gaps in the study	153
2.10	Summary	155

CHAPTER 3
ANALYSIS OF SMALL AND MEDIUM ENTERPRISES

3.1	Introduction	157
3.2	Definition of Small and Medium Enterprises in Malaysia	158
3.3	Small and Medium Enterprises Output to GDP	161
3.4	Geographical Location of SMEs	163
3.5	Small and Medium Sectors	164
	3.5.1 Manufacturing industry	165
	3.5.2 Services industry	168
	3.5.3 Agriculture	170
3.6	Challenges of SMEs	172
3.7	Summary	178

CHAPTER FOUR
RESEARCH DESIGN AND METHODOLOGY

4.1	Introduction	179
4.2	Philosophy of Research	180
4.3	Conceptual Framework	181
4.4	Research Design	183
	4.4.1 Sampling Design	184
	4.4.2 Population	186
4.5	Hypotheses Development	186
	4.5.1 The Relationship between Intellectual capital and Organizational Performance	188
	4.5.2 The Relationship between Intellectual Capital and Knowledge Sharing	189
	4.5.3 The Relationship between Knowledge Sharing and Organizational Performance	190
	4.5.4 The Relationship between Intellectual Capital and Innovation	190
	4.5.5 The Relationship between Innovation and Organizational Performance	191
	4.5.6 Intellectual Capital, Knowledge Sharing and Organizational Performance	191

4.5.7	The Relationship between Intellectual Capital, Innovation and Organizational Performance	192
4.5.8	The Relationship between Intellectual Capital, Knowledge Sharing, Innovation and Organizational Performance	193
4.6	Data Collection Procedure	194
4.6.1	The Questionnaire	194
4.7	Method of Survey	195
4.7.1	Survey Questionnaire Validation	197
4.7.2	Instrument Translation Process	198
4.7.3	Pilot Test	199
4.8	Reliability Test	200
4.9	Data Analysis Plan	201
4.10	Common Method Variance/ Common Method Bias	203
4.11	Assumptions	206
4.11	Summary	207

CHAPTER FIVE DATA ANALYSIS

5.1	Introduction	208
5.2	Data Collection	208
5.2.1	The Response Rate	208
5.2.2	Non Response Bias	209
5.2.3	Normality Test	210
5.2.4	Demographic Profiles	211
5.3	Univariate Analysis	214
5.3.1	Test of Collinearity and	214
5.4	Multivariate Analysis- Structural Equation Modelling	214
5.4.1	Measurement Model	215
5.4.2	The mediating role of knowledge sharing and innovation	234
5.4.3	Analysis of Structural Model and Testing Hypotheses	242
5.6	Summary of Hypotheses Findings	249
5.7	Summary	254

CHAPTER SIX DISCUSSION AND FINDINGS

6.1	Introduction	255
6.2	Review of Data Analysis Results	255
6.3	Readdressing the Research Questions	256
6.3.1	The Relationship between Intellectual Capital and Organizational Performance	256
6.3.2	The Relationship between Intellectual Capital, Knowledge Sharing and Organizational Performance	258
6.3.3	The Relationship between Intellectual Capital, Innovation and Organizational Performance	263
6.3.4	The Relationship between Intellectual Capital, Knowledge Sharing, Innovation and Organizational Performance	265
6.4	Summary	270

CHAPTER SEVEN CONCLUSION AND RECOMMENDATIONS

7.1	Introduction	272
7.2	Limitations and Suggestions for Future Research	273
7.3	Theoretical Contributions/ Implications	276
7.4	Recommendations	281
7.5	Summary	285

APPENDICES

Appendix 1	Taxonomy of Intellectual Capital, Knowledge Sharing, Innovation Studies
Appendix 2	Taxonomy of Knowledge Sharing Studies
Appendix 3	Taxonomy of Innovations
Appendix 4	List of Small and Medium Enterprises Definition
Appendix 5	Dimensions of Measurements
Appendix 6	Cover Letter
Appendix 7	Questionnaire
Appendix 8	Graph of P-Plot
Appendix 9	Results of Structural Equation Modeling
Appendix 10	Correlation of Final Items

REFERENCES

LIST OF FIGURES

Figure	Title	Page
1.1	Flow of Chapters	25
2.1	Resource-Based Value model	30
2.2	Basic Resources	33
2.3	The Haanes and Lowendahl Model	34
2.4	The Lowendahl Model	35
2.5	Conceptual roots of Intellectual Capital	37
2.5	Skandia Knowledge Management frameworks	40
2.6	Components of Intellectual Capital	42
2.7	The Danish Confederation of Trade Unions Model	43
2.8	Jaworski & Kohli Model	58
2.9	Intellectual capital dimensions	60
2.10(a)	The intellectual capital studies (Chen et al.,2004)	61
2.10(b)	The intellectual capital studies (Bontis, 2000)	61
2.11	Knowledge management enablers	63
2.12	Kaplan and Norton (1992)	64
2.13	Gamble and Blackwell Model	73
2.14	Demarest's Knowledge Management Model	74
2.15	Knowledge Cycle Model	76
2.16	Boisot Model	77
2.17	Knowledge and Trust Model	86
2.18	Integrative framework on knowledge-sharing-performanc relationship	91
2.19	Knowledge Work Model	92
2.20	Husted Model of Motivation for Knowledge Sharing	93
2.21	Factors that influence knowledge sharing between individuals in the organization	95
2.22	Knowledge Sharing Model	96
2.23	Knowledge Sharing Process	98
2.24	Innovation Model	100
2.25	Sources of Ideas	102
2.26	Circle of innovation	106
2.27	Innovation Typology	108
2.28	Innovation Level	109
2.29	Innovation Process	113
2.30	Innovation Management System	116
2.31	Knowledge Content Components and knowledge outcomes	119
2.32	Knowledge sharing Model	128
2.33	Integrative framework on knowledge-sharing-performance relationship	130
2.34	Hurley and Hult Innovation Model	132

Figure	Title	Page
2.35	Intellectual capital Model	135
2.36	Keskin's Market orientation Model	136
2.37	Hult Market Orientation Model	137
2.38	Hult and Hurley Market orientation Model	138
2.39	Martin and Terblance's Innovation Model	141
2.40	Afuah's Innovation Model	142
2.41	Intellectual Capital and Culture	143
2.42	Intellectual capital and Innovation Model	146
2.43	Knowledge Innovation Model	149
2.44	Knowledge sharing infrastructure model	150
2.45	Social aspects of innovation process Model	152
2.46	Collaboration and Interaction Innovation Model	153
3.1	Map of Malaysia	164
3.2	Development Programmes for SMEs	174
3.3	Creating Enabling Environment for SME Development in Malaysia	177
4.1	Conceptual Framework	182
4.2	Research Framework	182
4.3	The Research Process Flow Chart	183
4.4	The Hypotheses as Depicted in the Research Framework	187
5.1(a)	Measurement Model for Intellectual Capital	218
5.1(b)	Measurement Model for Innovation	218
5.1(c)	Measurement Model for Knowledge Sharing	219
5.1(d)	Measurement Model for Organizational Performance	219
5.2	Widaman's Three Comparison Models: A simplified Example using Innovation	224
5.3	Models for Discriminant Validity Test (Simplified Example of Intellectual Capital and Knowledge Sharing Constructs)	226
5.4	Illustrative Example of Testing Predictive Validity	228
5.5	Illustration of Mediating Effect	235
5.6 (a)	Direct Effect Relationship	237
5.6 (b)	Direct and Indirect Effect Relationships	238
5.6 (c)	Direct Effect Relationship	238
5.6 (d)	Direct Effect Relationship	239
5.6 (e)	Direct Effect Relationship	239
5.6 (f)	Direct Effect Relationship	240
5.6 (g)	Simplified Models for Testing the Mediation Effect of Knowledge Sharing and Innovation Model	240
5.7	Result of structural model	242
5.8	Simplified Models for sequential Chi-square difference Tests	246
5.9	The Final Structural Model	248

LIST OF TABLES

Table	Title	Page
1.1	Summary of intellectual capital studies	20
2.1	Types of knowledge resources	38
2.2	Taxonomy of Components of Intellectual Capital	45
2.3	Taxonomy of Intellectual Capital Dimensions	46
2.4	Benefits of Intellectual Capital	47
2.5	Definition of Intellectual capital (IC)	48
2.6	Human capital dimensions	55
2.7	Measurement of intellectual capital	64
2.8	Intellectual Capital Valuation	65
2.9	Intellectual Capital Research	66
2.10	Summary of Data, Information and Knowledge	69
2.11	Advantages of Knowledge Sharing	72
2.12	Types of knowledge transfer/knowledge sharing	83
2.13	Knowledge Sharing Measurement	88
2.14	Summary of Internal and External knowledge	89
2.15	Summary of knowledge sharing dimensions	104
2.16	Types of Innovation	110
2.17	Innovation Categories	111
2.18	The difference between Creativity and Innovation	117
2.19	Summary of literature review about variables influencing innovative efforts of SMEs	121
2.20	Determinants of innovation	124
2.21	The measurement of organizational performance	125
2.22	Measurement of intellectual capital towards organizational Performance	129
2.23	Knowledge Infrastructure	133
2.24	Impact of innovation on organizational performance	159
3.1a	Definition of SME based on Annual Sales Turnover	159
3.1b	Definition of SME based on Number of Full-Time Employees	160
3.2	Definition of SME based on category	162
3.3	Output and Value Added of SMEs by Sector(2003)	165
3.4	Total output by SMEs (Manufacturing)	168
3.5	Distribution of SMEs in services (sub-sector)	169
3.6	Total Factor Productivity and Contribution (1999-2008) by SMEs (Services)	169
3.7	Services Productivity	170
3.8	Distribution of SMEs in agriculture (sub-sector)	171
3.9	Production value resulting from initiatives by MADA	172
3.10	Innovation Performance and Innovation Enablers Rankings: Malaysia vs. Selected Countries, 2007-2011	176
4.1	Source of Measurements	195

Table	Title	Page
4.2	Reliability Test Results for the Pilot Study	201
4.3	Data Analysis Techniques	202
5.1	Correlations among independent variables	212
5.2	Demographic Profiles (Organization)	213
5.3	Demographic Profiles (Individual)	214
5.4	Multicollinearity Test Results	216
5.5	Summary of Items Dropped in Confirmatory Factor Analysis	218
5.6	Fit Results for Measurement Models after Instrument Validation	220
5.7	Summary of Other Results of the Measurement Models	224
5.8	Convergent Validity Tests (Bentler-Bonett Coefficient Δ)	225
5.9	Convergent and Discriminant Validity Tests (Widaman's Three Models Test)	226
5.10	Assessment of Discriminant Validity (Constrained and the Unconstrained models)	227
5.11	Test of Discriminant Validity	228
5.12	Results of Predictive Validity Test	232
5.13	Result of Construct Validity Assessment	236
5.14	Direct Relationships between Study Variables	
5.15	Fits for Models Used In Testing the Mediating Effects of Knowledge Sharing and Innovation	241
5.16	Sequential Chi-square difference Tests	244
5.17	Summary of Hypotheses	249
6.1	Summary of Discussion	270

LIST OF CHARTS

Chart	Title	Page
3.1	SMEs proportion	161
3.2	Contribution of SMEs to Economy	162
3.3	Distribution of SMEs (Manufacturing)	166
3.4	Productivity of SME in the Manufacturing Sector	167

LIST OF ACRONYMS AND SYMBOLS

AVE	Average Variance Extracted
CC	Customer Capital
CFI	Comparative Fit Index
GFI	Good Fit Index
HC	Human Capital
IC	Intellectual Capital
IMP3	Third Malaysian Industrial Master Plan
INV	Innovation
KM	Knowledge Management
KS	Knowledge Sharing
LV	latent variable
MI	Modification Index
MO	Market Orientation
OP	Organizational Performance
P	p-value
PC	Process Innovation
PD	Product Innovation
RBT	Resource-Based Theory
RBV	Resource-Based View
RC	Relational Capital
RMSEA	Root Mean Square of Approximation
SC	Structural Capital
SEM	Structural Equation Modelling
SME	Small and Medium Enterprises
SMIDEC	Small and Medium Enterprises Corporation
SPSS	Statistical Package for the Social Science
TLI	Tucker Lewis Index
Δ	Bentler-Bonnett Coefficient
R	R-Squared, proportion of variance
A	Alpha
$\Delta\chi^2$	Change in Chi-Square
χ^2	Chi-Square
λ	Lambda, Regression Weight

DEDICATIONS

To my parents,
To my husband,
To my beloved children

“Verily, with every difficulty there is relief
Therefore, when thou art free (from thine immediate task), still labour hard,
And to thy Lord turn (all) thy attention”