

**A DISSERTATION
ON
IMPACT OF KNOWLEDGE SHARING PRACTICES ON
BANKS' PERFORMANCE: A MEDIATING ROLE OF
CRITICAL SUCCESS FACTORS OF KNOWLEDGE
MANAGEMENT: EVIDENCE FROM BANKING SECTOR OF
PAKISTAN**



A thesis submitted to The Superior College, Lahore in partial fulfillment of the requirements for the degree of **Doctor of Philosophy in Business Administration**

Submitted By:

Wasim ul Rehman
Roll # PDBA-13114
Session 2012-2015

Department of Business and Management Sciences

Supervised By:

Prof. Dr. Muhammad Ilyas
Prof. Dr. Ch. Abdul Rehman



IMPACT OF KNOWLEDGE SHARING PRACTICES ON BANKS' PERFORMANCE: A MEDIATING ROLE OF CRITICAL SUCCESS FACTORS OF KNOWLEDGE MANAGEMENT: EVIDENCE FROM BANKING SECTOR OF PAKISTAN

By

Wasim ul Rehman
Roll No. PDBA – 13114
Session: 2012–2015

Thesis submitted to
The Superior College, Lahore

In partial fulfillment of the
requirements for the degree of

Doctor of Philosophy in Business Administration

Approved by:

Dr. Muhammad Ilyas
Supervisor

Dr. Ch. Abdul Rehman
Co-Supervisor

Mr. Kashif Mahmood
Program Manager of Research Degrees



The Superior College, Lahore
Faculty of Business and Management Sciences, Lahore, Pakistan

**DECLARATION TO BE FILLED BY THE STUDENT AT THE TIME OF
SUBMISSION OF THESIS TO THE SUPERVISOR AND/OR FOR
EXTERNAL EVALUATION**

Section 1: Particular of the Student		
1.1	Full Name	Wasim ul Rehman
1.2	Father's Name	Muhammad Aleem
1.3	Roll. Number	PDBA – 13114
1.4	Program	Doctor of Philosophy in Business Administration

Section 2: Particular of the Thesis		
2.1	Title	Impact of Knowledge Sharing Practices on Banks' Performance: A Mediating Role of Critical Success Factors of Knowledge Management: Evidence From Banking Sector of Pakistan
2.2	Supervisor's Name	Dr. Muhammad Ilyas
2.3	Co-Supervisor's Name	Dr. Ch.Abdul Rehman
2.4	Date of Completion	November 10, 2016



The Superior College, Lahore
Faculty of Business and Management Sciences, Lahore, Pakistan

SUPERVISOR'S CERTIFICATE ON
THESIS SUBMITTED BY A STUDENT

Section 1: Particulars of the Supervisor and Co-Supervisor		
1.1	Full Name (Supervisor)	Dr. Muhammad Ilyas Associate Professor and Dean of Research
1.2	Address	The Superior College, Faculty of Business and Management Sciences, Lahore.
1.3	Full Name (Co-Supervisor)	Dr. Ch. Abdul Rehman Chairman
1.4	Address	The Superior College, Faculty of Business and Management Sciences, Lahore.

Section 2: Particulars of the Student		
2.1	Full Name	Wasim ul Rehman
2.2	Father's Name	Muhammad Aleem
2.3	Registration Number	PDBA – 13114
2.4	Program	Doctor of Philosophy in Business Administration

Section 3: Particulars of the Thesis		
3.1	Title	Impact of Knowledge Sharing Practices on Banks' Performance: A Mediating Role of Critical Success Factors of Knowledge Management: Evidence From Banking Sector of Pakistan
3.2	Date of Completion	November 10, 2016

We certify that:

- a. The above named student has completed the cited thesis under our guidance and supervision.
- b. We are satisfied with quality of the student's research work, and
- c. We consider it worthy of submission for external evaluation.

4.1	Supervisor's Full Name and Signature	Dr. Muhammad Ilyas	
	Co-Supervisor's Full Name and Signature	Dr. Ch. Abdul Rehman	
4.2	Date	November 13, 2016	

DECLARATION OF ORIGINALITY

I, Wasim ul Rehman hereby solemnly declare that this project:

- a) is my original work, except where otherwise acknowledged in the text
- b) and that any additional sources of information have been duly cited
- c) shall not be submitted by me in future for obtaining any degree from this or other university or institution
- d) has incorporated the HEC Plagiarism Policy
- e) I understand that after submitting my thesis I may be called for viva and it is my responsibility to make myself available to attend this viva.

3.1	Student's Full Signature	
3.2	Date	November 10, 2016

DEDICATION

Words cannot explain the gratitude and respect which I have for my parents, wife and beloved son. I really dedicate this marvelous achievement of my life to those who always assisted me for the accomplished of this research dissertation. They are source of strength, inspiration and proud for me. Their inspiration towards knowledge served us as “Beacon of Light”

ACKNOWLEDGEMENTS

This dissertation would not be completed without thanking all the wonderful people who assisted me in fulfilling the requirements for this degree. First of all, I had the great fortune to study under the supervision of **Dr. Muhammad Ilyas**. I am overwhelmingly obliged to my supervisor **Dr. Muhammad Ilyas** for his kind guidance, help and moral support. He has been much more than one would have expected from an advisor. He always inspired me to generate new ideas, and pointed me in the right direction. Further, I would also like to extend my gratitude to my supervisor and remaining committee members for sparing some of their valuable time to read the dissertation and guided me with their valuable comments and suggestions. Special thanks go to my family and my colleagues who have without any doubts, encourage me for the completion of this research project.

TABLE OF CONTENTS

Chapter	Title	Page
1	INTRODUCTION.....	1
1.1	Background of the study	1
1.1.1	The Knowledge Management (KM) Perspective	4
1.1.1.1	Definition of Knowledge	8
1.1.1.2	Knowledge Classification	9
1.1.2	The Intellectual Capital (IC) Perspective.....	11
1.1.2.1	Significance of IC at Corporate Level	13
1.1.2.2	Characteristics of Intellectual Capital	15
1.2	Research Gap	16
1.3	Purpose of the Study	18
1.4	Objectives of the Study	19
1.5	Research Questions	20
1.6	Development of Proposed Conceptual Model	20
1.7	Development of the Hypotheses	22
1.8	Significance of the Study	24
1.9	Delimitations and Scope	26
1.10	Definition of Variables	27
A	Knowledge Sharing Practices	27
B	Knowledge Management Strategy	29
C	Knowledge Infrastructure Capability.....	29

D	Knowledge Process Capability	30
E	Intellectual Capital	30
1.11	Organization of the Study	31
2	EMPIRICAL LITERATURE REVIEW	33
2.1	Knowledge-based view (KBV) and Performance.....	33
2.2	Knowledge Management and Performance	36
2.3	Linking Knowledge Management with Employee Knowledge	38
2.4	Knowledge Management a Source of Competitive Advantage	39
2.5	Knowledge Sharing Practices and Performance	40
2.6	Knowledge Sharing and Innovation.....	44
2.7	Critical Success Factors of Knowledge Management ...	48
2.7.1	Knowledge Management Strategy	48
2.7.2	Knowledge Management Capabilities	51
2.7.2.1	Knowledge Infrastructure Capability / Knowledge Management Enablers.....	52
2.7.2.2	Knowledge Process Capability	54
2.7.3	Intellectual Capital (IC)	57
2.7.3.1	Human Capital	58
2.7.3.2	Structural Capital	60
2.7.3.3	Relational Capital.....	61
3	EMPIRICAL LITERATURE REVIEW	64
3.1	Knowledge Sharing Practices (Tacit and Explicit).....	64
3.1.1	Explicit KS Practices and Firm's Performance	65
3.1.2	Tacit KS Practices and Firm's Performance	66
3.2	Critical Successful Factors of KM for KS-driven Performance	66
3.2.1	Knowledge Management Strategy and Performance.....	66

3.2.2	Knowledge Management Capabilities	71
3.2.2.1	Knowledge Infrastructure Capability / Knowledge Management Enablers and Performance	72
3.2.2.1.1	Technology	73
3.2.2.1.2	Organizational Culture.....	74
3.2.2.1.3	Organizational Structure	77
3.2.2.2	Knowledge Process Capability and Performance	78
3.2.2.2.1	Knowledge Acquisition Process	80
3.2.2.2.2	Knowledge Conversion Process	82
3.2.2.2.3	Knowledge Application Process	83
3.2.2.2.4	Knowledge Protection.....	85
3.2.3	Intellectual Capital (IC) and Performance	87
3.2.3.1	Human Capital and Firm Performance	89
3.2.3.2	Structural Capital and Firm Performance	89
3.2.3.3	Relational Capital and Firm Performance.....	90
3.2.3.4	Knowledge Sharing and Intellectual Capital	90
3.2.3.4.1	Explicit KS Practices and Human Capital	92
3.2.3.4.2	Explicit KS Practices and Structural Capital	93
3.2.3.4.3	Explicit KS Practices and Relational Capital.....	93
3.2.3.4.4	Tacit KS Practices and Human Capital.....	93
3.2.3.4.5	Tacit KS Practices and Structural Capital.....	94
3.3	Inter-relational among Critical Success Factors of KM through KM Models.....	94
3.3.1	Keskin’s Model.....	94
3.3.2	The Gold, Malhotra, and Segars Model.....	95
3.3.3	Laupase’s Individual to Organizational Knowledge Conversion Research Model	96
3.3.4	Choi’s Model	98

3.3.5	The Lee and Choi Model	99
3.3.6	Park’s Model	99
3.4	Development of Proposed Conceptual Model and Hypotheses	100
4	METHODOLOGY	105
4.1	Research Approach	105
4.2	Description of Sampling	108
4.3	Instrumentation	109
4.3.1	Independent Variables	110
4.3.1.1	Knowledge Sharing Practices	110
4.3.2	Mediating Variables	112
4.3.2.1	Knowledge Management Strategy	112
4.3.2.2	Knowledge Infrastructure Capability	113
4.3.2.2.1	Technology	113
4.3.2.2.2	Decentralization	113
4.3.2.2.3	Formalization	113
4.3.3	Knowledge Process Capability	114
4.3.3.1	Knowledge Acquisition	114
4.3.3.2	Knowledge Conversion	115
4.3.3.3	Knowledge Application	115
4.3.3.4	Knowledge Protection	115
4.3.4	Intellectual Capital Practices	116
4.3.5	Dependent Variable	117
4.3.5.1	Organizational Performance	117
4.3.5.1.1	Operational Excellence	118
4.3.5.1.2	Customer Intimacy	118
4.3.5.1.3	Product Leadership	118

4.3.5.1.4	Financial Achievement	118
4.4	Reliability and Validity of Instrument	119
4.5	Pilot Study.....	123
4.6	Data Collection Procedures.....	124
5	ANALYSIS AND RESULTS	125
5.1	Descriptive Statistics.....	125
5.1.1	Demographic Profile of Respondents	126
5.1.2	Descriptive Summary.....	127
5.2	Reliability Analysis.....	131
5.3	Correlation Analysis	132
5.4	Principal Component Analysis	133
5.4.1	Kaiser-Meyer-Olkin (KMO) Measure of Sample Adequacy Test and Barlett's Test of Sphericity	133
5.4.2	Eigenvalues	135
5.4.3	Principal Component Analysis for Explicit and Tacit Knowledge Sharing Scale	137
5.4.4	Principal Component Analysis for Knowledge Management Strategy	139
5.4.5	Principal Component Analysis for Knowledge Infrastructure Capability Scale	140
5.4.6	Principal Component Analysis for Knowledge Process Capability Scale	143
5.4.7	Principal Component Analysis for Intellectual Capital Practices Scale	145
5.4.8	Principal Component Analysis for Overall Performance Scale.....	147
5.5	Structural Equation Modeling.....	149
5.5.1	Stages in Structural Equation Modeling	149
5.5.1.1	Model Specification	150
5.5.1.2	Model Identification.....	150

5.5.1.3	Model Estimation.....	151
5.5.1.4	Model Fit.....	151
5.5.1.4.1	Absolute Fit Indices	152
5.5.1.4.2	Comparative Fit Indices	153
5.5.1.4.3	Parsimonious Fit Index	154
5.5.1.4.4	Model Modification	154
5.5	Measurement Model for Explicit and Tacit KS Driven Performance	155
5.6	Regression Analysis.....	155
5.7	Mediation Analysis	159
5.7.1	Indirect Effect of Explicit Knowledge Sharing Practices on Banks' Performance Through System Oriented Strategy.....	160
5.7.2	Indirect Effect of Explicit Knowledge Sharing Practices on Banks' Performance Through Human Oriented Strategy.....	162
5.7.3	Indirect Effect of Explicit Knowledge Sharing Practices on Banks' Performance Through Technology as a Mediator....	164
5.7.4	Indirect Effect of Explicit Knowledge Sharing Practices on Banks' Performance using Formalization as a Mediator.....	165
5.7.5	Indirect Effect of Explicit Knowledge Sharing Practices on Banks' Performance using Organizational Culture as a Mediator	168
5.7.6	Indirect Effect of Explicit Knowledge Sharing Practices on Banks' Performance using Knowledge Acquisition as a Mediator	170
5.7.7	Indirect Effect of Explicit Knowledge Sharing Practices on Banks' Performance using Knowledge Protection as a Mediator	172
5.7.8	Indirect Effect of Explicit Knowledge Sharing Practices on Banks' Performance using Knowledge Conversion as a Mediator	174
5.7.9	Indirect Effect of Explicit Knowledge Sharing Practices on Banks' Performance using Knowledge Application as a Mediator	176

5.7.10	Indirect Effect of Explicit Knowledge Sharing Practices on Banks' Performance using Human Capital Practices as a Mediator	178
5.7.11	Indirect Effect of Explicit Knowledge Sharing Practices on Banks' Performance using Structural Capital Practices as a Mediator	180
5.7.12	Indirect Effect of Explicit Knowledge Sharing Practices on Banks' Performance using Rational Capital Practices as a Mediator	182
5.7.13	Indirect Effect of Tacit Knowledge Sharing Practices on Banks' Performance using System Oriented Strategy as a Mediator	184
5.7.14	Indirect Effect of Tacit Knowledge Sharing Practices on Banks' Performance using Human Oriented Strategy as a Mediator	186
5.7.15	Indirect Effect of Tacit Knowledge Sharing Practices on Banks' Performance using Technology as a Mediator.....	187
5.7.16	Indirect Effect of Tacit Knowledge Sharing Practices on Banks' Performance using Decentralization as a Mediator... ..	187
5.7.17	Indirect Effect of Tacit Knowledge Sharing Practices on Banks' Performance using Formalization as a Mediator.....	191
5.7.18	Indirect Effect of Tacit Knowledge Sharing Practices on Banks' Performance using Organizational Culture as a Mediator... ..	193
5.7.19	Indirect Effect of Tacit Knowledge Sharing Practices on Banks' Performance using Knowledge Acquisition as a Mediator... ..	195
5.7.20	Indirect Effect of Tacit Knowledge Sharing Practices on Banks' Performance using Knowledge Protection as a Mediator... ..	197
5.7.21	Indirect Effect of Tacit Knowledge Sharing Practices on Banks' Performance using Knowledge Conversion as a Mediator... ..	199
5.7.22	Indirect Effect of Tacit Knowledge Sharing Practices on Banks' Performance using Knowledge Application as a Mediator... ..	201

5.7.23	Indirect Effect of Tacit Knowledge Sharing Practices on Banks' Performance using Human Capital Practices as a Mediator.....	203
5.7.24	Indirect Effect of Tacit Knowledge Sharing Practices on Banks' Performance using Structural Capital Practices as a Mediator.....	205
5.7.25	Indirect Effect of Tacit Knowledge Sharing Practices on Banks' Performance using Relational Capital Practices as a Mediator.....	207
5.8	Individual Effect of Knowledge Sharing Practices on Mediating Variables.....	209
5.8.1	Individual Effect of Explicit Knowledge Sharing Practices on Knowledge Management Strategy, Knowledge Infrastructure Capability, Knowledge Process Capability and Intellectual Capital Practices.....	209
5.8.2	Individual Effect of Tacit Knowledge Sharing Practices on Knowledge Management Strategy, Knowledge Infrastructure Capability, Knowledge Process Capability and Intellectual Capital Practices.....	212
5.9	Individual Effect of Tacit Knowledge Sharing Practices on Overall Performance of Banks.....	217
5.9.1	Individual Effect of Explicit Knowledge Sharing Practices on Overall Performance of Banks.....	217
5.9.2	Individual Effect of Tacit Knowledge Sharing Practices on Overall Performance of Banks.....	218
5.10	Individual Effect of Mediating Variables on Overall Performance of Banks.....	229
5.10.1	Individual Effect of System Oriented Strategy on Overall Performance of Banks.....	219
5.10.2	Individual Effect of Human Oriented Strategy on Overall Performance of Banks.....	220
5.10.3	Individual Effect of Technology on Overall Performance of Banks.....	221
5.10.4	Individual Effect of Decentralization on Overall Performance of Banks.....	221
5.10.5	Individual Effect of Formalization on Overall Performance of Banks.....	222

5.10.6	Individual Effect of Organizational Culture on Overall Performance of Banks.....	223
5.10.7	Individual Effect of Knowledge Acquisition on Overall Performance of Banks.....	224
5.10.8	Individual Effect of Knowledge Protection on Overall Performance of Banks.....	225
5.10.9	Individual Effect of Knowledge Conversion on Overall Performance of Banks.....	226
5.10.10	Individual Effect of Knowledge Application on Overall Performance of Banks.....	227
5.10.11	Individual Effect of Human Capital Practices on Overall Performance of Banks.....	228
5.10.12	Individual Effect of Structural Capital Practices on Overall Performance of Banks.....	239
5.10.13	Individual Effect of Relational Capital Practices on Overall Performance of Banks.....	230
6	DISCUSSION OF THE STUDY.....	233
6.1	Knowledge Sharing, Knowledge Management Strategy and Performance	234
6.1.1	Explicit Knowledge Sharing Practices, Knowledge Management Strategy and Performance	235
6.1.2	Tacit Knowledge Sharing Practices, Knowledge Management Strategy and Performance	239
6.2	Knowledge Sharing Practices, Knowledge Management Capability and Performance.....	241
6.2.1	Explicit Knowledge Sharing Practices, Knowledge Infrastructure Capability and Performance	241
6.2.2	Tacit Knowledge Sharing Practices, Knowledge Infrastructure Capability and Performance.....	248
6.3	Knowledge Sharing Practices, Knowledge Process Capability and Performance	250
6.3.1.1	Explicit Knowledge Sharing Practices, Knowledge Acquisition and Performance	250
6.3.1.2	Explicit Knowledge Sharing Practices, Knowledge Conversion and Performance	251

6.3.1.3	Explicit Knowledge Sharing Practices, Knowledge Protection and Performance	252
6.3.1.4	Explicit Knowledge Sharing Practices, Knowledge Application and Performance	253
6.3.2	Tacit Knowledge Sharing Practices, Knowledge Process Capability and Performance.....	254
6.3.2.1	Tacit Knowledge Sharing Practices, Knowledge Acquisition and Performance	254
6.3.2.2	Tacit Knowledge Sharing Practices, Knowledge Conversion and Performance	255
6.3.2.3	Tacit Knowledge Sharing Practices, Knowledge Protection and Performance	256
6.3.2.4	Tacit Knowledge Sharing Practices, Knowledge Application and Performance	257
6.4	Knowledge Sharing Practices, Intellectual Capital Practices and Performance	258
6.4.1	Explicit Knowledge Sharing Practices, Intellectual Capital Practices and Performance	258
6.4.1.1	Explicit Knowledge Sharing Practices, Human Capital Practices and Performance	258
6.4.1.2	Explicit Knowledge Sharing Practices, Structural Capital Practices and Performance	260
6.4.1.3	Explicit Knowledge Sharing Practices, Relational Capital Practices and Performance	262
6.4.2	Tacit Knowledge Sharing Practices, Intellectual Capital Practices and Performance	264
6.4.2.1	Tacit Knowledge Sharing Practices, Human Capital Practices and Performance	264
6.4.2.2	Tacit Knowledge Sharing Practices, Structural Capital Practices and Performance	265
6.4.2.3	Tacit Knowledge Sharing Practices, Relational Capital Practices and Performance	266
7	CONCLUSION	268
7.1	Summary of Findings	268

7.2	Theoretical Implications	270
7.3	Limitations of Study	279
7.4	Practical Implications.....	279
	REFERENCES.....	284
	APPENDIX A (Cover Letter)	327
	APPENDIX B (Questionnaire)	328
	APPENDIX C (Correlation Matrix and Discriminant Analysis)	333
	APPENDIX D (Simple Regression Analysis).....	336
	APPENDIX E (Simple Regression Analysis).....	343
	APPENDIX F (Measurement Models)	351

LIST OF TABLES

Table	Title	Page
1.1	Possible Taxonomies or Classification of Knowledge.....	11
2.1	Classifications of KM Strategies.....	50
2.2	Classification of Knowledge Process Capability.....	56
5.1	Demographic Profile of Respondents.....	126
5.2	Descriptive Statistics of Survey Items.....	128
5.3	Reliability of Multi-item Constructs.....	132
5.4	KMO and Bartlett's Test.....	135
5.5	Eigenvalues.....	137
5.6	Factor Items Loadings for the Explicit and Tacit Knowledge Sharing Scale.....	139
5.7	Factor Items Loadings for the Knowledge Management Strategy Scale.....	140
5.8	Factor Items Loadings for Knowledge Infrastructure Capability Scale.....	142
5.9	Factor Items Loadings for Knowledge Process Capability Scale.....	145
5.10	Factor Items Loadings for Intellectual Capital Practices Scale.....	147
5.11	Factor Items Loadings for Overall Performance Scale.....	148
5.12	Direct effect (Before mediating variables).....	160
5.13	Indirect Effect of Explicit Knowledge Sharing Practices through System Oriented Strategy.....	160
5.14	Structural Model Fitness for Explicit KS, System Oriented Strategy and Performance.....	161
5.15	Indirect Effect of Explicit Knowledge Sharing Practices through Human Oriented Strategy.....	162
5.16	Structural Model Fitness for Explicit KS, Human Oriented Strategy and Performance.....	163
5.17	Indirect Effect of Explicit Knowledge Sharing Practices through Technology.....	164

5.18	Structural Model Fitness for Explicit KS, Technology and Performance.....	165
5.19	Indirect Effect of Explicit Knowledge Sharing Practices through Formalization.....	166
5.20	Structural Model Fitness for Explicit KS, Formalization and Performance.....	167
5.21	Indirect Effect of Explicit Knowledge Sharing Practices through Organizational Culture.....	168
5.22	Structural Model Fitness for Explicit KS, Organizational Culture and Performance.....	169
5.23	Indirect effect of Explicit Knowledge Sharing Practices through Knowledge Acquisition.....	170
5.24	Structural Model Fitness for Explicit KS, Knowledge Acquisition and Performance.....	171
5.25	Indirect effect of Explicit Knowledge Sharing Practices through Knowledge Protection.....	172
5.26	Structural Model Fitness for Explicit KS, Knowledge Protection and Performance.....	173
5.27	Indirect effect of Explicit Knowledge Sharing Practices through Knowledge Conversion.....	174
5.28	Structural Model Fitness for Explicit KS, Knowledge Conversion and Performance.....	175
5.29	Indirect Effect of Explicit Knowledge Sharing Practices through Knowledge Application.....	176
5.30	Structural Model Fitness for Explicit KS, Knowledge Application and Performance.....	177
5.31	Indirect Effect of Explicit Knowledge Sharing Practices through Human Capital Practices.....	178
5.32	Structural Model Fitness for Explicit KS, Human Capital Practices and Performance.....	179
5.33	Indirect Effect of Explicit Knowledge Sharing Practices through Structural Capital Practices.....	180
5.34	Structural Model Fitness for Explicit KS, Structural Capital Practices and Performance.....	181
5.35	Indirect Effect of Explicit Knowledge Sharing Practices through	

relational capital practices	182
5.36 Structural Model Fitness for Explicit KS, Relational Capital Practices and Performance.....	183
5.37 Indirect Effect of Tacit Knowledge Sharing Practices through System Oriented Strategy.....	184
5.38 Structural Model Fitness for Tacit KS, System Oriented Strategy and Performance.....	185
5.39 Indirect effect of Tacit Knowledge Sharing Practices through Human Oriented Strategy.....	186
5.40 Structural Model Fitness for Tacit KS, Human Oriented Strategy and Performance.....	187
5.41 Indirect Effect of Tacit Knowledge Sharing Practices through Technology.....	188
5.42 Structural Model Fitness for Tacit KS, Technology and Performance.....	189
5.43 Indirect Effect of Tacit Knowledge Sharing Practices Decentralization.....	190
5.44 Structural Model Fitness for Explicit KS, Decentralization and Performance.....	191
5.45 Indirect Effect of Tacit Knowledge Sharing Practices through formalization.....	192
5.46 Structural Model Fitness for Tacit KS, Formalization and Performance.....	193
5.47 Indirect Effect of Tacit Knowledge Sharing Practices through Organizational Culture.....	193
5.48 Structural Model Fitness for Tacit KS, Organizational Culture and Performance.....	194
5.49 Indirect effect of tacit knowledge sharing practices through knowledge acquisition.....	195
5.50 Structural Model Fitness for Tacit KS, Knowledge Acquisition and Performance.....	198
5.51 Indirect Effect of Tacit Knowledge Sharing Practices through Knowledge Protection.....	197
5.52 Structural Model Fitness for Tacit KS, Knowledge Protection and Performance.....	198

5.53	Indirect Effect of Tacit Knowledge Sharing Practices through Knowledge Conversion.....	199
5.54	Structural Model Fitness for Tacit KS, Knowledge Conversion and Performance.....	200
5.55	Indirect Effect of Tacit Knowledge Sharing Practices through Knowledge Application.....	201
5.56	Structural Model Fitness for Tacit KS, Knowledge Application and Performance.....	202
5.57	Indirect Effect of Tacit Knowledge Sharing Practices through Human Capital Practices.....	203
5.58	Structural Model Fitness for Tacit KS, Human Capital Practices and Performance.....	204
5.59	Indirect Effect of Tacit Knowledge Sharing Practices through Structural Capital Practices.....	205
5.60	Structural Model Fitness for Tacit KS, Structural Capital Practices and Performance.....	206
5.61	Indirect Effect of Tacit Knowledge Sharing Practices through Relational Capital Practices.....	207
5.62	Structural Model Fitness for Explicit KS, Relational Capital Practices and Performance.....	208
5.63	Multiple Regression Analysis to Find the Effect of Individual Explicit KS Practices on KM Strategy and Knowledge Infrastructure Capability....	211
5.64	Multiple Regression Analysis to Find the Effect of Individual Explicit KS Practices on KM Strategy and Knowledge Infrastructure Capability....	212
5.65	Multiple Regression Analysis to Find the Effect of Individual Tacit KS Practices on KM Strategy and Knowledge Infrastructure Capability....	216
5.66	Multiple Regression Analysis to Find the Effect of Individual Tacit KS Practices on Knowledge Process Capability and Intellectual Capital Practices.....	217
5.67	Multiple Regression Analysis to Find the Effect of Individual Explicit KS Practices on Overall Performance of Banks.....	218
5.68	Multiple Regression Analysis to Find the Effect of Individual Tacit KS Practices on Overall Performance of Banks.....	219
5.69	Multiple Regression Analysis to Find the Effect of Individual System Oriented Strategy on Overall Performance of Banks.....	220

5.70	Multiple Regression Analysis to Find the Effect of Individual Human Oriented Strategy on Overall Performance of Banks.....	220
5.71	Multiple Regression Analysis to Find the Effect of Technology on Overall Performance of Banks.....	221
5.72	Multiple Regression Analysis to Find the Effect of Decentralization on Overall Performance of Banks.....	222
5.73	Multiple Regression Analysis to Find the Effect of Formalization on Overall performance of banks.....	223
5.74	Multiple Regression Analysis to Find the Effect of Organizational Culture on Overall Performance of Banks.....	224
5.75	Multiple Regression Analysis to Find the Effect of Knowledge Acquisition on Overall Performance of Banks.....	225
5.76	Multiple Regression Analysis to Find the Effect of Knowledge Protection on Overall Performance of Banks.....	226
5.77	Multiple Regression Analysis to Find the Effect of Knowledge Conversion on Overall Performance of Banks.....	227
5.78	Multiple Regression Analysis to Find the Effect of Knowledge Application on Overall Performance of Banks.....	228
5.79	Multiple Regression Analysis to Find the Effect of Human Capital Practices on Overall Performance of Banks.....	229
5.80	Multiple Regression Analysis to Find the Effect of Structural Capital Practices on Overall Performance of Banks.....	230
5.81	Multiple Regression Analysis to Find the Effect of Relational Capital Practices on Overall Performance of Banks.....	230
5.82	Summary of Results of Hypotheses.....	231

LIST OF FIGURES

Figure	Title	Page
1.1	Corporate Capital.....	14
3.1	Proposed mediating model of KS-Driven performance.....	101
5.1	Overall Model.....	158
5.2	Proposed Structural Model-A.....	161
5.3	Proposed Structural Model-B.....	163
5.4	Proposed Structural Model-C.....	165
5.5	Proposed Structural Model-D.....	167
5.6	Proposed Structural Model-E.....	169
5.7	Proposed Structural Model-F.....	171
5.8	Proposed Structural Model-G.....	173
5.9	Proposed Structural Model-H.....	175
5.10	Proposed Structural Model-I.....	177
5.11	Proposed Structural Model-J.....	179
5.12	Proposed Structural Model-K.....	181
5.13	Proposed Structural Model-L.....	185
5.14	Proposed Structural Model-M.....	187
5.15	Proposed Structural Model-N.....	188
5.16	Proposed Structural Model-O.....	190
5.17	Proposed Structural Model-P.....	192
5.18	Proposed Structural Model-Q.....	194
5.19	Proposed Structural Model-R.....	196
5.20	Proposed Structural Model-S.....	198
5.21	Proposed Structural Model-T.....	200
5.22	Proposed Structural Model-U.....	202

5.23	Proposed Structural Model-V.....	204
5.24	Proposed Structural Model-W.....	206
5.25	Proposed Structural Model-X.....	208

LIST OF ACRONYMS

AVE	Average Variance Extraction
CI	Customer Intimacy
IC	Intellectual Capital
ICT	Information Telecommunication Technology
HOS	Human Oriented Strategy
HCP	Human Capital Practices
IT	Information Technology
IPRs	Intellectual Property Rights
CFA	Confirmatory Factor Analysis
EKSP	Explicit Knowledge Sharing Practices
KBV	Knowledge Based View
KS	Knowledge Sharing Practices
KM	Knowledge Management
KMC	Knowledge Management Capabilities
KPC	Knowledge Process Capability
KIC	Knowledge Infrastructure Capability
KA	Knowledge Acquisition
KP	Knowledge Protection
KC	Knowledge Conversion
TKSP	Tacit Knowledge Sharing Practices
SCP	Structural Capital Practices
SEM	Structural Equation Model
SECI	Socialization, Externalization, Combination and Internalization
SOS	System Oriented Strategy
RBV	Resource Based View

RCP	Relational Capital Practices
ROI	Return on Investment
ROE	Return on Equity
OE	Operational Excellence
PL	Product Leadership
FA	Financial Achievements
PCA	Principal Component Analysis
OP	Overall Performance

ABSTRACT

In present era, rapidly changing competitive environment, optimal performance level is a major concern for financial sector. Banks are intensively shifting themselves from production to knowledge base for achieving optimal performance standards. It is also need of the hour, to shift this sector into knowledge intensive in order to increase the productivity of banks and as well of knowledge workers which was a challenging in post capitalistic economy. Knowledge sharing (KS) practices could be one through which banks can achieve desire performance outcomes through leveraging the role of critical success factors of knowledge management in KS-driven performance. The basic premise of this study is to construct the theoretical model and to explore the role of knowledge sharing practices (i.e. explicit and tacit) in determining the performance of banks while establishing a mediating mechanism of critical success factors of knowledge management (KM).

Scarcity of literature and dearth of proposed optimal mediating model have led the aim of this research particularly in South Asia, more specifically in context of banking sector of Pakistan. Realizing the important role of bankers at banks, the major objective of this study is to test the mediating role of critical success factors of KM while establishing the KS-driven performance. To achieve this objective, the theoretical and useful lens of resource based view (RBV) and knowledge based view (KBV) are used to develop the mediating mechanism of KS-driven performance in banking sector of Pakistan, which is the one of the knowledge oriented sector in Pakistan.

In order to explore the mediating role of critical success factors of KM, this study uses the theoretical lens of KBV and RBV. KBV is the refined form of RBV where RBV asserts that organizations have bunch of intangible resources which depends upon manager's ability to cultivate, nurture and deploy these resources effectively in order to obtain sustainable competitive advantage.

One of the significant features of KBV which is the extension of RBV provides the constructed approach to realize the stock knowledge and flow of knowledge into the firm. The stock and flow of knowledge within and outside of the organization positively influences the performance outcomes in knowledge intensive industries whether these are manufacturing or services concerns. However, researchers are still on an impulse to uncover the underlying relationship or to develop the optimal framework to explain the KS-driven performance.

Drawing upon the conceptual fit, this study investigates whether the explicit and tacit KS practices contribute to overall performance of banks in presence of critical success factors of KM. A sample of 810 was drawn using the random sampling technique, self-administrated questionnaire containing with 82 questions, using the five point likert scale to examine the degree of agreement on each item. Structural equation model (SEM) technique was employed to examine the mediating mechanism between KS practices and success factors of KM in determining KS-driven performance. Principal component analysis (PCA) and direct path analysis are employed to examine the convergent, discriminant and nature of relationship among the constructs.

The findings of the study indicate both explicit and tacit KS practices positive and significantly influence the overall performance of banks. It also postulates that KS practices positive linked with (a) system oriented strategy (b) human oriented strategy (c) technology (d) formalization (e) organizational culture (f) knowledge acquisition (g) knowledge protection (h) knowledge conversion (i) knowledge application (j) human capital practices (k) structural capital practices and (l) relational capital practices, whereas KS practices are not significantly linked with decentralization. Further, results also postulate that tacit KS practices more significantly explain the relationship with mediating and dependent variables. Moreover, all the mediating variables significantly influence overall performance of banks. However, with respect to mediating relationship of critical success factors of KM in regard to

KS-driven performance of banks, the findings of the study indicate that KM strategy (i.e. system oriented and human oriented strategy), knowledge infrastructure capability (i.e. technology, formalization and organizational culture), knowledge process capability (i.e. knowledge acquisition, knowledge protection, knowledge conversion, and knowledge application) and intellectual capital practices (i.e. human capital practices, structural capital practices and relational capital practices) partially mediates the relationship between explicit KS practices and overall performance of banks.

Similarly, results are also shed light that all critical success factors of KM except system oriented strategy partially mediate the relationship between tacit KS practices and overall performance of banks. However, system oriented strategy completely mediates the relationship to strengthen tacit KS driven performance. Nevertheless, findings also postulate that strength of mediation of success factors of KM is more important and significant with tacit KS practices than explicit KS practices.

This study contributes to existing literature in numerous ways. First, this study is a prime effort which has investigated and tested the comprehensive mediating model of critical success factors of KM in order to explore the more insights based on RBV and KBV. Second, this is a unique attempt in a sense that most of studies only investigated the direct effect of a few critical success factors of KM on performance not considering the mediating role of critical success factors of KM in KS-driven performance. Therefore, the study provides broader context while considering all the success factors of KM which never been addressed before more specifically in western and South Asian perspective in a combined framework.

Keywords: Knowledge sharing practices, Knowledge management, Knowledge management strategy, Knowledge infrastructure capability, Knowledge process capability, Intellectual capital practices, Business performance, Banks and Pakistan

Chapter 1

INTRODUCTION

1.1 Background of the Study

Resource base view (RBV) of the organization is the most emerging line of research which tends to determine the relationship of firm's capabilities and resources with its performance. It postulates that firm's controllable resources bring out competitive advantage for firms' because these are unique, rare and cannot be imitated and replaced (Barney, 1991). There is no formal definition of RBV and theoretical premise of RBV has mixed its' definition. Prior researches recognize RBV as intangible assets, organizational structures, capabilities and culture is the milestone for formulating and implementing strategies to improve the performance outcomes (Barney, 1991). Recent researches explore that organizational resources are different from capabilities (Gold *et al* 2001; Sukoco, 2007; Smith and Mills, 2011). These are defined as the basic units of analysis which are unique and compiled together in a manner to create competitive positioning (Bharadway, 2000). However, capabilities are known as the abilities by which an organization makes, integrates and implements the firm's valuable resources (Zaim *et al.*, 2007; Gold *et al.*, 2001).

Firm's resources are separated into tangible and intangible resources which are controlled, owned and accessed by the organization permanently (Helfat and Peteraf, 2003). Lopez and Esteves (2013) refer the capabilities as the abilities which an organization possess in order to properly utilize the firm's resources for performing the integrated functions to obtain the specified goals and objectives.

Knowledge resources are the emerging concept in knowledge based view (KBV) originated from RBV. It gained lot of consideration of researchers, academicians and practitioners in knowledge base economies (Chen and Huang, 2009; Spender, 1996) who suggested that knowledge resources provide useful lens to understand the relationship of knowledge resources with capabilities (Wernerfelt,

1984; Wade and Hulland, 2004). Basically metaphor of knowledge segregates the knowledge as an object and process. Creation, sharing, storage, manipulation and transfer of knowledge is termed as knowledge as an object (Andriessen, 2006; Bratianu and Orzea, 2013). This metaphor of knowledge is concerned with transformation of knowledge at individual and as well at organizational level (Andriessen, 2006; Bratianu and Orzea, 2013). In order to shed light the transformation of tacit (implicit) knowledge into explicit knowledge, a model is developed by Takeuchi and Nonaka (1995) which is a foundation of this metaphor and named as internalization, externalization, combination and socialization (SECI) model.

RBV states that organization enjoys bundle of resources which are the source of competitive advantage to obtain superior performance outcomes (Wernerfelt, 1984). It argues that resources and capabilities which a firm possesses can be used to get competitive advantage because these are unique, worth-full and difficult to copy easily (Barney, 1991). Past studies are more concerned to highlight the relationship of intangible resources (i.e. human capital, structure capital and relational capital) capabilities (i.e. culture, structure and technology) with firms' value, which are critical for firms' to imply the strategies (Zack *et al.*, 2009; Lee and Sukoco, 2007; Gold *et al.*, 2001). These intangible resources and capabilities perform paramount role for knowledge sharing driven performance (Wang *et al.*, 2014; Gold *et al.*, 2001; Lee and Sukoco, 2007) which help to acquire desired outcomes (Barney, 1991). Further, resource structuring in a unique and different way is the most viable method to achieve competitive advantage (Bharadway, 2000).

Knowledge based view (KBV) is the extension of resource based view (RBV), provides useful lens to apprehend the stock of knowledge in the firm and flow of knowledge into the firm (Decarolis and Deeds, 1999). The stock and flow of knowledge within and outside the organization positively influence the performance outcomes in knowledge intensive industries whether these are manufacturing or services (Decarolis and Deeds 1999). The KBV argues that organizational knowledge is multi-dimensional (heterogeneous) and aptitudes are major components of performance variation (Grant, 1996b). In addition, organizations use different internal

and external ways for the formation of knowledge. Organizations use KBV to know the main underlying principles of knowledge management (KM) with regard to creation, application and transfer of knowledge (Nonaka, 1994; Grant, 1996).

In current era with dynamic marketplace, knowledge and learning play an explicit role to enhance organizational performance and competence (Prieto & Revilla, 2004). Managers need to highlight that how knowledge and learning environment can influence organization's performance. They are attempting to use knowledge sharing (KS) practices for sustainable organization's performance and competitiveness. Therefore, keeping in view, organizations are realizing the importance of KS practices as a key source for competitiveness, value creation, and strategy formulation for decision making (Tiwana, 2001 and Keskin, 2005). It is imperative for organizations to manage knowledge effectively because firms' performance relies on (KBV) and its effective deployment (Perez & Pablos, 2003). Previous discussion suggests based on RBV theory which postulates that organization has plethora of intangible resources and capabilities with different approaches (Barney, 1991). These resources and capabilities work as a bridge for KS driven performance. The explicit objective of this study is to explore the relationship among KS practices, knowledge management capabilities, knowledge management strategy and performance. Intangible knowledge resources are the source of competitive advantage. According to competence based view (CBV), the ability of a firm is based on how effectively they develop, protect and disseminate the knowledge to get competitive advantage (Foss, 1996). However, Sanchez *et al.* (1996) point out that organization's competitive advantage is based on organizational learning and experiences which collectively referred as intangible resources.

Finally, based on RBV, the intent of this study is to explicitly examine the; (1) relationship of KS practices with performance outcomes (2) mediating role of critical success factors of KM (i.e. KM strategy, knowledge infrastructure capability, knowledge process capability and intellectual capital (IC) practices) in KS driven performance in context of banking sector of Pakistan, more specifically in context of South Asian which is a relatively less researched area with respect to developing countries.

1.1.1 The Knowledge Management (KM) Perspective:

According to KBV, knowledge resources are divided into two categories i.e. knowledge assets (i.e. resources) and knowledge capabilities (Mills and Smith, 2011; Gold *et al.*, 2001; Grant, 1996b; Tanriverdi, 2005; Alavi and Leidner, 2001). Knowledge assets refer to intellectual capitals or intangible assets of organization treated as raw materials for a value creation process which help out to revive the organizational performance and competences over the sphere (Marr *et al.*, 2004; Wang *et al.*, 2014). The knowledge assets are defined as ‘intellectual capitals’ which can be the result of knowledge transformation processes or the skill bundles, experience and capability of firms’ intellectual capital (e.g. workforce, procedures and strategic alliances) (Namasivayan and Denizci, 2006). However, knowledge capabilities also refer to KM capabilities which consist of knowledge infrastructure capability and knowledge process capability (Gold *et al.*, 2001; Mills and Smith, 2011; Alavi and Leidner, 2001). Knowledge infrastructure capability includes technological infrastructure, organizational culture and structure whereas knowledge process capability consists of knowledge acquisition, conversion, application and protection. Such composite nature of firm’s KM capabilities are generally referred to as abilities of an organization related to knowledge utilization and sharing through a series of managerial processes (Lee and Choi, 2003; Tanriverdi, 2005). Further, research indicates both knowledge assets and KM capabilities are the valuable strategic knowledge resources for a firm’s sustainable performance and competitiveness (Wang *et al.*, 2014; Wang and Wang, 2012; Mills and Smith, 2011). Prior research suggests that knowledge assets (intellectual capital) and capabilities (knowledge infrastructure and process capabilities) have strong connection with firms’ performance (Lee and Sukoco, 2007; Zaim *et al.*, 2007; Gold *et al.*, 2001; Zack *et al.*, 2009; Wu and Chen, 2014; Wang *et al.*, 2014; Grant, 1996). Knowledge process capabilities are the abilities of an organization in utilizing knowledge assets to generate valuable knowledge through a series of managerial processes (Lee and Choi, 2003; Tanriverdi, 2005).

Knowledge process capabilities can be explained in terms of tactics an organization may employ using knowledge assets from a set of procedures and

methods for creating value (Gold *et al*, 2001; Alavi and Leinder, 2001). Many knowledge process models have been developed to realize the proper knowledge functions such as knowledge creation, application, storage and transfer (Alavi and Leinder, 2001), application, acquisition, security (Gold *et al*, 2001), transfer, realization, legality (Grover and Davenport, 2001; Oshri *et al*, 2008), makings, distribution, storage (Shin *et al*, 2001), integration, transfer, leverage (Tanriverdi, 2005).

Knowledge can be created in the development, codification and storage stage, by research, observation, experiments and through employees. However, it can be obtained from external like market channels, clients, suppliers and competitors through scanning process (Turner and Makhija, 2006). After obtaining new knowledge, the legal processes are required for conversion of knowledge into practical implementation of workable formats (Grover and Daven Port, 2001). Knowledge transfer is basically the movement of knowledge from the source to the one who may use it (Shin *et al*, 2006; Walter *et al*, 2007). It may occur at any level of organization like from individual to the upper level of departments and divisions (Alvi and Leinder, 2001). Knowledge effect may be nominal without its transfer (Turner and Makhija, 2006). Sometimes, it becomes difficult if proper channels are not involved (Hoetker and Agarwal, 2007; Turner and Makhija, 2006). Knowledge integration is the description of the firms' processes to organize, restructure and schedule the existing knowledge to increase the knowledge, efficiency and synergy (Gold *et al.*, 2001).

Today in rapidly changing environment, organizations are dramatically shifting themselves from production to knowledge oriented (Drucker, 1993; Powell and Snellman, 2004). It is also need of the hour, to shift the economy into knowledge intensive in order to increase the productivity of knowledge workers (Drucker 1999b) which remain a challenge in post capitalistic economy (Drucker, 1993). One of the significant features of KBV is that it uses in knowledge creation and as well for knowledge application (Spender, 1996; Nonaka, 1994; Grant, 1996). It determines the firms' ability to exploit fresh knowledge through research and development (Nonaka 1994). Knowledge productivity (KP) also refers as knowledge efficiency which is

relatively difficult to conceptual. Some studies consider it macro-economic prospective (Machlup, 1972) while Drucker (1981 and 1993) points out that knowledge productivity is a managerial prospective as a “human ability”. Drucker (1981 and 1993) and Stam (2007) define knowledge productivity as “human ability” where individuals and team members get knowledge base improvement and innovation through KM strategies, knowledge infrastructure and process capabilities. In modern era, knowledge productivity of workers is a managerial challenge. Drucker (1999a) identifies six major elements in order to improve the knowledge productivity or efficiency of workers which are “autonomy, task, continuous learning, continuous innovation, and quality and worker asset”. Further, Drucker’s suggests that it is a management responsibility to enhance knowledge productivity of individuals. Organization employs different approaches to enhance the knowledge productive in different ways like KM strategy, KM capabilities and intellectual capital practices (Davenport and Prusak, 1998; Sharabati *et al.*, 2010; Gold *et al.*, 2001). Therefore, it is a growing consensus that firms’ ability to innovate is closely link to IC practices (Subramaniam and Youndt, 2005; Tsai and Ghoshal, 1998).

Earlier studies revealed that IC is positively associated with firm performance (Bontis *et al.*, 2000; Bontis, 1998; Wang *et al.*, 2014). This emergent phenomena has increased the research focus to examine the relationship among IC, competitiveness and innovation where both competitive positioning and innovation used to evaluate the firm’s performance (Tseng and Goo, 2005; Subramaniam and Youndt, 2005). However, some studies found the interaction effect among innovation, IC and KM (Darroch and McNaughton, 2002; Liu *et al.*, 2005; Gloet and Terziovski, 2004). These studies found that resource productivity of firms can be enhanced through effective investment on IC which is the aggregation of firm’s knowledge resources and use to generate value and competitive advantage. Further, studies decomposed the IC into three major components’ i.e. human capital, structural capital and relational capital (Seetharaman *et al.*, 2004; Subramaniam and Youndt, 2005).

In last two decades, KM has become an emerging line of research, difficult to conceptualize but still commonly regarded by many researchers, practitioners and policy makers. Beckman (1997) suggests that KM is used to enhance the competency

of organization. Many authors define KM in phases to account the relationship of KS practices with organization's performance and have included new essentials to incorporate the management perspective related to KM methodology (Nonaka, 1994; Davenport and Prusak, 1998; Zack *et al.*, 2009). However, it is still need to structure its methodology for the successful management of knowledge for every organization (Johannessen and Olsen, 2003). KS practices are used as a management tool to capture the conventional models of organization and to provide a practical approach (Marques and Simon 2006).

For many organizations improved performance and competitive advantage is solely based on management of valuable intangible resources. These are jointly called as strategic knowledge resources which paved the way for sustainable performance of organizations (Gold *et al.*, 2001; Nonaka, 1994). Organizations are also substantially investing for the effective management of knowledge resources from year to year. Over the last two decades, knowledge management and intellectual capital has evolved from emergent concept to most common business function. As evidence suggests number of journals have published academic research on knowledge management and intellectual capital. Extant of research in area of KM comprises of conceptual contexts and theoretical models, primarily focusing on qualitative and exploratory studies (Nonaka, 1994; Davenport and Prusak, 1998; Massey *et al.*, 2002; Kalling, 2003). This study is an attempt to provide valuable insights to the premise of KM and to identify more involved and unique KS practices. It is a time to go one step ahead by exploring KS practices both explicit and tacit using some precise methods.

Earlier discussion pointed that most of studies on KM and IC journals are descriptive in nature (Chauvel and Dupres, 2002; McCann and Buckner, 2004 and Kalling, 2003). Limited studies observed the empirical relationship between KS practices and organizational performance (Wang *et al.*, 2014; Moffett *et al.*, 2003; Zack *et al.*, 2009; Marques and Simon 2006). Keeping in view, the significant objective of present study is to investigate the relationship between KS practices and performance in the presence of mediating mechanism of critical success factors of KM (i.e. knowledge management strategies, knowledge infrastructure capability, knowledge process capability and intellectual capital practices).

1.1.1.1. Definitions of Knowledge:

Many of us have instinctive feel for come to know term “knowledge” which is difficult to define. Academicians, researchers and practitioners claim that “knowledge” has multidimensional and multifaceted meanings under different situations. KM literature still lacks any formal definition of “knowledge”. However, endeavors have been made to present formal definition of “knowledge” in knowledge management literature (Nonaka, 1994; Alavi & Leidner, 2001).

Some of important definitions in knowledge management literature define “knowledge” as follows:

Nonaka and Takeuchi (1994) define knowledge as “Justified true belief”.

“Information of which rationality has been recognized through tests of proof” argued by Liebeskind (1996).

Davenport and Prusak (1998) stated knowledge as “Formal experiences, values, expert insights, and related information”

Fahey and Prusak (1998) referred, “Structured data and actionable information based on partially at human skill and experience” (Leonardo and Sensiper 1998).

Wijnhoven (1998) define knowledge as “Assortment of real experiences or a set of intellectual conceptualizations”

“Knowledge as an object which can be codified, disseminated and applied to get desired objectives” argued by Al-hawari (2004).

Further, for better understanding of knowledge, a scholar must make a clear distinction among knowledge, information and data. Fahey & Prusak, (1998) suggest that for meaningful understanding of KM, it is prerequisite to make a clear distinction among knowledge, information and data. It is noticeable that several authors are more sensitive to make distinction among data, information and knowledge. Numerous authors have common argument that data is raw facts, information is organized data with relevant purpose and knowledge is valuable information (Davenport, 1997).

Moreover, Hsieh and Tsai, (2007) underpins that knowledge pyramid is based on knowledge transformations, where data is transmitted into information, and information is transmitter into valuable knowledge. This argument urges the debate among researchers and academicians to understand the relationship among data, information and knowledge. Tuomi (1999) argued that knowledge transformation would be possible with the help of development of computer system and points out that data develops in response of adding value to information, as a result to obtain structured knowledge. This planned and structured knowledge represent the meaning of information.

Wiig *et al.*, (1997) discussed the important features of knowledge;

- a) Knowledge is invisible, difficult to quantify.
- b) Knowledge is unpredictable.
- c) Knowledge is personified.
- d) Knowledge has multi-layered impact on organization outcomes.
- e) Knowledge cannot be bought from market.

1.1.1.2 Knowledge Classifications:

The theoretical conceptualization of KM literature classified the knowledge into tacit and explicit knowledge (Tiwana, 2002; Hubert, 1996; Nonaka & Takeuchi, 1995). Latter ‘explicit’ knowledge refers to codified and structured knowledge through a formal way (Nonaka & Takeuchi, 1995) whereas first ‘tacit’ knowledge is individual and context specific resides in the minds of people which always challenging to formalize and articulate (Tiwana, 2002). As explicit knowledge is articulated knowledge in terms of manuals, policy, procedures, reports, circulars, books and other compiled data etc. whereas, tacit knowledge is implicit-beliefs, values and intuitions which is formulated as result of individual’s experiences (Hubert 1996).

Setting out earlier discussion, Nonaka and Takeuchi (1995) listed some important features of explicit and tacit knowledge. Explicit knowledge encompasses the following characteristics (a) systematic and formal (b) codified (c) rational and (d)

articulated knowledge which provides meaningful information. However, tacit knowledge is (a) unstructured and unarticulated (b) presented in form of beliefs, values, hunches, emotions, intuitions and insights (c) highly subjective and situational.

Nonaka and Takeuchi (1995) presented a model of SECI (internalization, externalization, combination and socialization) as a major perspective in KM circles that classified the model of SECI into “codification” and “personalization” where “externalization” and “combination” are linked with codified knowledge and “internalization” and “socialization” are concerned with personalization of knowledge. However, Hasan and Al-hawari (2003) made a significant contribution in original model of Nonaka and Takeuchi (1995) by adding semi-explicit and semi-tacit knowledge. They made four important contributions in model of (SECI): (1) knowledge articulation to transform from explicit to semi tacit forms (2) espousal of knowledge to transform semi-tacit to tacit form (3) standardization’s of knowledge to transform it from semi-tacit to tacit forms (4) and systemization of knowledge to transform it from semi-explicit to explicit forms. In addition, Nonaka and Takeuchi model various other types of models exist within the organization such as Boisot’s (1998) model that highlights codification and personalization as a KM strategy where this model defines that knowledge assets can be located with three dimension from “un-codified” (knowledge that cannot be easily organized for transmission) to “codified” (knowledge that can be easily organized for transmission), from “concrete” to “abstract” and from “undiffused”(difficult to share) to “diffused”(easy to share) (Haggie and Kingston, 2003).

Table # 1 Possible Taxonomies or Classifications of Knowledge

Authors	Classification
Boisot (1987)	“Codified, not coded, diffused, undiffused Knowledge”
Nonaka & Takeuchi(1995)	“Explicit and tacit knowledge”
Quinn, <i>et al.</i> ,(1996)	“Cognitive knowledge, advanced skill, systems understanding, and self-motivated creativity”
Fleck (1997)	“Formal knowledge, contingent knowledge, informal knowledge, meta knowledge, tacit knowledge”
De Long and Fahey (2000)	“Human, social, and structured knowledge”
Tiwana (2002)	“Explicit and tacit knowledge”

1.1.2 The Intellectual Capital (IC) Perspective:

Banking sector performs an essential role to underpin the economic growth of the country. In a rapidly changing competitive environment, banking sector has become a knowledge intensive sector during the phase of globalization (Mavridis, 2004). It has experienced radical changes in trade finance and credit banking along with information technologies (Joshi *et al.*, 2010). Management of intangible assets (i.e. intellectual capital) is very essential to enhance the value creation and efficiency of this sector (Stewart, 1997). Capital in terms of business perspective refers any asset which is utilized by organizations to generate the future cash flows. Most commonly recognized assets of an organization are its tangible assets which are physical and financial assets of an organization. The values of these assets are disclosed by public limited companies in their annual reports.

The tangible assets or physical assets of an organization are land, building, plant, machinery etc. and financial assets are owner’s equity, retain earning, working capital, prepaid expenses etc. However, intangible assets are human capital (skill, knowledge and experience of employees), structural capital (patents, copyrights, procedures, innovative processes or data bases etc.) and relational capital (relationship

with internal and external stakeholders) which are properly utilized by employees and organizations to competitive advantage. These assets are also very important for determining the future growth and profit of organizations. However, it is very difficult to quantify in terms of value because it is invisible for internal as well as for external stakeholders. Stewart (1994) points out the concept of IC and used it to separate the organization's book and market value. Extant of literature defined IC in different ways including Edvinsson and Malone, (1997) considered IC as knowledge resource that can be converted into value and difficult to capture fully in balance sheet. However, Sharabati *et al.*, (2010) and Stewart and Ruckdeschel, (1998) define it as intellectual material like information, intellectual property rights (IPRs), research and development (R&D), innovation and creation, systems and program and experience and expertise of employees that provide competitive positioning to firms.

The appearance of intellectual capital in the middle 1990s has shaped a huge literature. Over the period of 1959-1997, a diverse set of academic researchers and practitioners have developed a new line of business strategies for knowledge base economies. The pioneer researchers in development of IC are (Itam 1980 Mobilizing of Invisible Assets; Hall 1981 Research on Human Values; Sveiby 1986 The Know-How company on managing intangible assets; Teece April 1986 Extracting value from innovation; Sveiby 1988 "The Annual Report" introducing "knowledge capital" Sveiby 1989 "The Invisible Balance Sheet"). The growing importance of IC and its components for example structural capital (innovative processes), human capital (human capabilities) and relational capital (relation with external stakeholders) has under researched for last two decades.

Considerable attention devoted to recognize the significance of IC due to its' compatibility with organizational capabilities and resources for sustainable performance of firms in last few decades (Lonnqvist, 2004; Bontis, 1998). It has been widely discussed with KM, focusing on the supervision of knowledge assets in organizational studies (Scarbrough, & Swan, 2002; Mouritsen & Larsen, 2005). The contemporary research on IC gained the momentum when studies focused that effective incorporation of IC is imperative for smooth flow on knowledge (Sveiby, 1997; Stewart, 2001). Recent evidence from Australia found that firms' future

prosperity in terms of growth and performance is based on IC e.g. knowledge and information resides in the minds of people (i.e. human capital) rather than physical capital (Wood, 2003). He suggests that both IC and KM are very important for proven growth of organizations (Boedker *et al.*, 2005). In early 1991 U.S. companies shifted the trend to invest in non-financial assets (intellectual capital) rather than in financial assets. Since then the gap has been widened with each year. Intellectual assets are critical for future growth and success of business which rarely found in traditional balance sheet. In 1997 an organization named “Intellectual Capital Sweden” started its work for protection and management of intellectual assets and it has conducted more than 400 projects for companies all over the world for protection of IC reporting and disclosure.

IC is an enhance concept of corporate reporting and management tool that enables companies to use this new driver more effectively. Companies like in Skandia and Sweden used the concept of IC as a supplementary reporting in annual reports. Since January 01 2002, it has become mandatory for companies in Denmark to disclose the intellectual capital in their annual reports if companies have substantial knowledge resources in order to certify the reports by auditors. Further, it helps the investors to better understand the potential hidden intellectual assets and its value in order to ascertain the future growth of businesses.

Intellectual capital has gained the attentions of researchers for last two decades. It is very important ingredient for business promotion and development. Many researchers, authors and scholars have attributed different definitions of intellectual capital. They regarded IC as knowledge, information and experience that can be used to create value (Stewart 1997; Sveiby, 1997; Bontis, 1998).

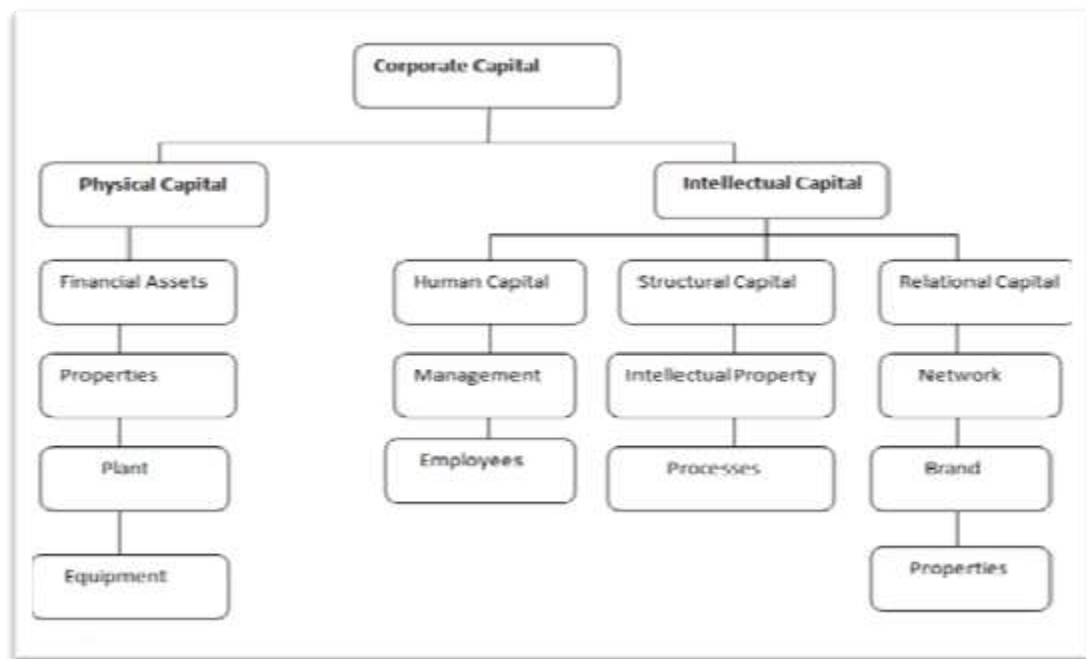
1.1.2.1 Significance of Intellectual Capital at Corporate Level:

Prior discussion suggests that value of a firm is determined by intangible assets which are regarded as intellectual capital. It also points out that measuring the performance of IC is essential for corporate heads who wants to maintain the long term sustainability of firms in knowledge-based economy.

Many organizations around the globe are contemplating to adopt IC management strategies which are very successful to improve the productivity and efficiency of the firms as a source of competitive advantage (Cabrita and Vaz, 2006; Sharabati *et al.*, 2010). Edvinsson (in Bontis, 2000) conceptualized the IC strategic alliance with customers, practical experience, experts' skills and managerial technology which tend help to formulate the competitive strategies. Managers consider the IC as a driving force for their business promotion. They consider that intellectual capital has significant effect on all lines of business performance and its effect cannot be overlook over the sphere.

Corporate Capital: Figure 1.1

Source: Stewart (2005)



Further, they anticipate that corporate capital is vital for achieving the long term strategic goals of organizations. Stewart (2005) divides the corporate capital into physical and intellectual capital where the physical capital refers to organization financial and non-financial assets (e.g. financial papers, equipment, properties etc.). These assets perform important role to improve the financial performance of organizations. Many management scholars and practitioners also consider IC a key

determinant to augment the business performance along with physical capital (Sveiby, 1997; Stewart, 2001; Wang *et al.*, 2014). Therefore, they allocate considerable financial resources for effective deployment of IC practices. Organizations are substantially investing on knowledge assets (IC) to improve resource restructuring, IT systems, maintenance of strategic alliances and human resources. Recent research set the evidence that investment on KM initiatives help to improve the efficiency of knowledge assets in terms of human, structural and relational capital efficiency which are the source of competitive advantage for sustainable performance of firms (Liao *et al.*, 2011; Rehman *et al.*, 2011; Pandey and Dutta, 2013; Wang *et al.*, 2008, Wang *et al.*, 2014). However, in contrast, in view of growing importance of knowledge economies, most of studies were failed to find any significant relation of knowledge resources with business performance (Bogner and Bansal, 2007; Kulkarni *et al.*, 2006; Lee *et al.*, 2005; Shin, 2004). This might be due to application of inadequate techniques in determining KS-driven performance.

1.1.2.2 Characteristics of Intellectual Capital:

Intellectual capital has several distinct characteristics which are as follows.

- Intellectual assets provide competitiveness. Unlike physical assets which can only be used for doing one thing. However, intellectual assets are multifaceted.
- According to KBV, the human and relational (customer) capital cannot be owned. It is used to be shared among employees, customers and external stakeholders. Human capital refers to employees' skill, experience and expertise which tend to provide competitive positioning. Whereas, in contrast the structural capital is also an intangible asset which can be owed, controlled and managed by the organization.
- Firms use IC for knowledge creation to gain higher profit returns and competitive advantage.
- IC provides insight into employees' skill and improvement strategies.

- IC provides insight into know-how improvement, company processes and systems and how these systems can be used to provide better quality products and services.
- It provides insight into firms future needs of knowledge resources.

1.2 Research Gap

In present era, rapidly changing environment with a cut-throat competition, achieving optimal performance level is a major concern for all types of organizations (Chang and Huang, 2011). Organizations are intensely shifting themselves from production to knowledge base (Drucker, 1993; Powell and Snellman, 2004) for achieving optimal performance standards. It is also need of the hour, to shift the economy into knowledge intensive in order to increase the productivity of knowledge workers (Drucker 1999b) which was a challenging in post capitalistic economy (Drucker, 1993). One of the significant features of KBV is that it is used in knowledge creation and as well for application of it (Spender, 1996; Grant, 1996; Nonaka, 1994). It determines the ability of the firms to exploit new knowledge through research and development (Nonaka 1994).

Although in last couple of decades, KBV which is the extension of resource based view (RBV) has provided the constructed lens to realize the stock of knowledge in the firm and flow of knowledge into the firm (Decarolis and Deeds 1999). The stock and flow of knowledge within and out of the organizations positively influence the performance outcomes in knowledge intensive industries whether these are manufacturing or services concerns (Decarolis and Deeds 1999). However, researchers are still on an impulse to uncover the underlying relationship or to develop the optimal framework to explain the KS-driven performance. Scarcity of literature and dearth of proposed optimal mediating model have led the aims of this research particularly in context of South Asia, more specifically in context of banking sector of Pakistan. Realizing the important role of bankers at banks, the major intend of the study is to test the mediating role of critical success factors of KM while establishing the KS-driven performance. To achieve this objective, the theoretical lens of RBV and KBV are used to develop the mediating mechanism on KS-driven

performance in banking sector of Pakistan, which is the one of the most knowledge oriented sector.

Abundant of empirical work demonstrates the role of KM and IC in achieving the required performance standards (Eren 1982; Nonaka, 1991; Drucker, 1993; Nonaka and Takeuchi, 1995; Wiig 1996; Black and Synan, 1997; Subramaniam and Youndt 2005; Salaman and Storey, 2002; Haragadon & Fanelli, 2002; Smith, Collins, & Clark, 2005; Gold *et al.* 2001; Zaim *et al.* 2007 and Zack *et al.*, 2009; Gao *et al.*, 2009; Wang and Wang, 2012; Sharabati *et al.*, 2010; Hsu and Wang, 2012; Mohiuddin, Najibullah and Shahid 2006; Rehman *et al.*, 2011; Phusavat *et al.* 2011; McAdam *et al.*, 2012; Liu *et al.*, 2005). During the last couple of decades a plethora of research has been executed to exhibit the underlying relationship between KM and performance and IC and performance. However, researchers still view that more effort are required to shed light on that convincing and comprehensive relationship that yields the readers' attentions more appropriately.

After in depth analysis of available literature, the present study is capable to bridge the most significant research gap with respect to knowledge sharing (KS) practices and firms' performance and also attempts to investigate the mediating role of critical successful factors of KM. Much of studies on KS-performance are devoted to inspect the effect of KS on performance in telecommunication, pharmaceutical, software, biotechnology, biochemistry, electrical machinery and information and electronic sectors (Zack *et al.*, 2009; Bierly & Chakrabarti, 1996; Gold *et al.* 2001; Beckman, 1997; Marques and Simon 2006; Salazar, *et al.* 2003; Ali *et al.* 2012; Smith, Collins, & Clark, 2005; Liu *et al.*, 2005; Wu and Chen , 2014; Zaim *et al.* 2007). There is a scarcity of research on knowledge sharing (KS) practices and performance relationship particularly in context of banking sector of Pakistan. Limited studies were found to examine the impact of KS practices on performance (Zaim *et al.* 2007; Marques and Simon 2006; Zack *et al.*, 2009; Wang *et al.*, 2014). Similarly, few studies were also found which examine the role of KM capabilities (i.e. infrastructure and process capability on organizations' performance (Gold *et al.*, 2001; Mills and Smith 2011), however no study was found that examines the role of KS practices on organizations' performance through mediation of critical successful

factors of KM particularly in banking sector both in local and international context. One of the noteworthy contributions of this study is that IC practices are also considered as one of the critical success factor of KM and is included in the mediation model.

There is a dire need to investigate the role KS practices on banks' performance through mediation of critical success factors of KM and IC practices in developing countries like where financial sector plays fundamental role for uplifting the economic growth through qualities of financial services and products. As an emerging discipline with little empirical work on underlying premise, possibly, this study will bridge the most significant gap in literature by investigating large scale empirical evidence that makes a significant difference to ascertain the overall banks performance. This will also provide more broad set of unique evidence for decision making to test the KS practices relationship with mediating variables (KM strategies, knowledge infrastructure capability, knowledge process capability and intellectual capital practices) and dependent variable (overall performance) that would perhaps bridge the most significant gap in context of financial sector of Pakistan.

1.3 Purpose of the Study

In current era with dynamic marketplace and ever changing needs, where knowledge and learning are playing an explicit role to enhance the performance and competitiveness in knowledge oriented industries. The current study focuses on financial sector (banks) is limited to a single industry in order to examine knowledge sharing practices in banks which provides new insights for firms like in other industries. The foremost aim of this research is to incorporate a mediating mechanism which can best describe and assist in knowledge sharing (KS) practices and its effect on banks' performance with help of critical successful factor of KM and IC practices. Such mechanism will add benefits and provide useful insights in KM spheres in order to solve the dilemma that how an organization can coordinate its KM initiatives. Specific purposes of this quantitative and explanatory research are to:

1. Define financial sector (banks) of Pakistan in terms of knowledge sharing practices, KM strategies, KM infrastructure capability, KM process capabilities, and IC practices and banks' performance.
2. Explore the role of KM capabilities for banks performance which is composition of knowledge infrastructure capability (i.e. technology, structure and organizational structure) and knowledge process capability (knowledge acquisition, conversion, protection and application).
3. Examine the degree of influence between human and system orientation strategies on KS practices.
4. Explore distinct IC practices relating to human, structural and relational capital practices in order to examine the role of IC for KS-driven performance.
5. Investigate the relationships among KS practices, KM strategy, KM infrastructure capability, KM process capability, IC practices and banks' performance.
6. Investigate the mediating role of KM strategies, KM infrastructure capability, KM process capability and IC practices between KM practices and banks performance.
7. Explore the composite effect of KM capabilities including the KM strategies, infrastructure and process capability on banks performance.

1.4 Objectives of the Study:

The foremost objective of study is:

1. To test the mediating model between KS practices and banks' performance in context of banking sector of Pakistan.

However, this study also focuses on following sub-objectives:

- a) The proposed theoretical model of study defines the mediating mechanism of (knowledge based view) between KS practices and banks performance and to test the model in the banking sector of Pakistan.
- b) To examine the impact of KS practices on mediating variables that is knowledge based outcomes of KM (KM strategy, knowledge infrastructure

capability, knowledge process capability and intellectual capital) and impact of knowledge based outcomes of KM on perceived banks performance.

- c) To facilitate the practitioners and policy makers, the present study will provide the constructive lens in implementing the essential managerial adjustments relating to KS-driven performance in banking sector of Pakistan.

1.5 Research Questions:

The following are the research questions of the study:

1. Do the explicit KS practices influence overall performance of banks in terms of four value disciplines of performance (i.e. operational excellence, customer intimacy, product leadership, financial performance)?
2. Do the tacit KS practices influence overall performance of banks in terms of four value disciplines of performance (i.e. operational excellence, customer intimacy, product leadership, financial performance)?
3. Do the critical success factors of KM (i.e. KM strategy, knowledge infrastructure capability, knowledge process capability and IC practices) mediate the relationship between KS practices i.e. explicit and tacit practices and overall performance of banks.

1.6 Development of proposed conceptual model:

The proposed conceptual framework in this study is supported by a strong theoretical premise that is resource based view (RBV) and its further transformation into knowledge based view (Rivard *et al.*, 2006) in order to gain a holistic understanding and way KS practices lead banks' performance. After a comprehensive and critical review of literature, this premise suggests that KS enabled performance might be rooted through the identification of knowledge resources (knowledge assets) and knowledge process capabilities (Tanriverdi, 2005; Gold *et al.*, 2001; Marr *et al.*, 2004) and on other critical success factors of KM (Mills and Smith 2011).

The conceptual model of study has identified and included high-committed KS practices that may lead to superior banks' performance in an effective manner (Zack *et al.*, 2009; Marques and Simon 2006; Wang *et al.*, 2008; Zaim *et al.* 2007; Wang *et al.*, 2014). However, mediating variables are critical success factors of KM (i.e. KM strategy, KM infrastructure capability, KM process capability and IC practices) are incorporated in the model in order to formulate the optimal KS-driven performance mediating mechanism (Gold *et al.*, 2001; Marr *et al.*, 2004; Zack *et al.*, 2009; Tanriverdi, 2005; Marques and Simon 2006; Wang *et al.*, 2008; Zaim *et al.* 2007; Wang *et al.*, 2014; Wu, and Chen 2014).

Nevertheless, this study divides multilayer concept of organizations' performance means banks' performance into four value disciplines which are operational excellence, customer intimacy, product leadership and financial performance (Marques and Simon 2006; Wang *et al.*, 2008; Zaim *et al.* 2007; Wang *et al.*, 2014; Wu, and Chen 2014; Zack *et al.*, 2009). This model is formulated within the assumptions that RBV and KBV provide the constructed lenses to explore the underlying relationship of KS-driven performance mechanism in the context of financial sector of Pakistan.

The resource based view (RBV) of an organization suggests that KM has fascinated a substantial attention of researchers, academicians and practitioners where knowledge resources are considered as valuable strategic assets determines the firms' value and competitiveness (Barney, 1991; Karkoulian *et al.*, 2013). Organizations spend substantial amount of capital on KM initiatives such as process restructuring, IT systems, maintenance of strategic alliances and human resources. Such investment on KM is imperative in order to increase the efficiency of knowledge resources such as KM capabilities, KM strategy, IC practices which are the source of competitiveness for sustainable performance (Liao *et al.*, 2011; Pandey and Dutta, 2013; Wang *et al.*, 2008). For effective management of knowledge resources, organizations believe that KM investments are imperative before launching KM initiatives. Besides substantial investment on knowledge resources most of studies were unable to find any significant improvement in business performance (Bogner and Bansal, 2007; Kulkarni

et al., 2007; Lee *et al.*, 2005; Shin, 2004). This might be due to the inadequate techniques in determining KS-driven performance.

Some studies also found that KS oriented performance might be driven through process-based concepts (Melville *et al.*, 2004; Lee and Choi, 2003; Rai *et al.*, 2006) which involved developing of three major approaches. First, encompasses RBV and its transformation into KBV (Rivard *et al.*, 2006). This approach suggests that KS enabled performance might be rooted through the identification of knowledge resources (knowledge assets) and knowledge process capabilities (Tanriverdi, 2005; Gold *et al.*, 2001). Marr *et al.*, (2004) suggest that knowledge resources or assets are the intellectual capital that helps to generate value and competitiveness and invigorate the abilities of organization over the sphere. However, a study points out that knowledge process capabilities are the abilities, used to generate valuable knowledge through knowledge resources and managerial processes of an organization (Lee and Choi, 2003). These both knowledge assets and process capabilities are the strategic knowledge resources which help the organization to enhance the KS-enabled performance.

1.7 Development of the hypotheses:

The proposed underlying research model has led this study to incorporate the following hypotheses:

H1a: Explicit KS practices positively linked with system oriented strategy.

H1b: Explicit KS practices positively linked with human oriented strategy.

H1c: Explicit KS practices positively linked with technology.

H1d: Explicit KS practices positively linked with decentralization.

H1e: Explicit KS practices positively linked with formalization.

H1f: Explicit KS practices positively linked with organizational culture.

H1g: Explicit KS practices positively linked with knowledge acquisition.

- H1h: Explicit KS practices positively linked with knowledge protection.
- H1i: Explicit KS practices positively linked with knowledge conversion.
- H1J: Explicit KS practices positively linked with knowledge application.
- H1k: Explicit KS practices positively linked with human capital practices.
- H1l: Explicit KS practices positively linked with structural capital practices.
- H1m: Explicit KS practices positively linked with relational capital practices.
- H2a: Tacit KS practices positively linked with system oriented strategy.
- H2b: Tacit KS practices positively linked with human oriented strategy.
- H2c: Tacit KS practices positively linked with technology.
- H2d: Tacit KS practices positively linked with decentralization.
- H2e: Tacit KS practices positively linked with formalization.
- H2f: Tacit KS practices positively linked with organizational culture.
- H2g: Tacit KS practices positively linked with knowledge acquisition.
- H2h: Tacit KS practices positively linked with knowledge protection.
- H2i: Tacit KS practices positively linked with knowledge conversion.
- H2J: Tacit KS practices positively linked with knowledge application.
- H2k: Tacit KS practices positively linked with human capital practices.
- H2l: Tacit KS practices positively linked with structural capital practices.
- H2m: Tacit KS practices positively linked with relational capital practices.
- H3a: System oriented strategy positively linked with overall performance of banks.

H3b: Human oriented strategy positively linked with overall performance of banks.

H4a: Technology positively associated with overall performance of banks.

H4b: Decentralization positively associated with overall performance of banks.

H4c: Centralization conversion positively linked with overall performance of banks.

H4d: Organizational culture positively linked with overall performance of banks.

H5a: Knowledge acquisition positively linked with overall performance of banks.

H5b: Knowledge protection positively linked with overall performance of banks.

H5c: Knowledge conversion positively linked with overall performance of banks.

H5d: Knowledge Application positively linked with overall performance of banks.

H6a: Human capital practices positively linked with overall performance of banks.

H6b: Structural capital positively linked with overall performance of banks.

H6c: Relational capital positively linked with overall performance of banks.

H7: Explicit KS practices positively linked with overall performance of banks.

H8: Tacit KS practices positively linked with overall performance of banks.

1.8 Significance of the study:

- Service sector is playing an outstanding role in promoting the gross domestic product (GDP) in number of transitional economies. The literature on KS-driven performance is primarily focusing on manufacturing sector. Abundant of empirical work demonstrates the role of knowledge management and intellectual capital in achieving the required performance standards in manufacturing sector (Eren, 1982; Nonaka, 1991; Drucker, 1993; Nonaka and Takeuchi, 1995; Wiig 1996; Black and Synan, 1997; Subramaniam and Youndt 2005; Salaman and Storey, 2002; Haragadon & Fanelli, 2002; Smith,

Collins, & Clark, 2005; Gold *et al.* 2001; Liu *et al.*, 2005; Zaim *et al.* 2007 and Zack *et al.*, 2009; Gao *et al.*, 2009; Wang and Wang, 2012; Sharabati *et al.*, 2010; Hsu and Wang, 2012; Mohiuddin *et al.*,2006; Rehman *et al.*,2011; Phusavat *et al.* 2011; McAdam *et al.*, 2012). Therefore, present study is also very significant based on research gap because it has provided a strong premise that no study was found which has been conducted on financial sector both in international and national context.

Moreover, it is equally important to consider the KS practices as a source of knowledge driven performance through testing a unique and comprehensive mediation model of KBV which is commonly referred as critical success factors of KM.

- Keeping in view for effective management of knowledge sharing in banks, a set of unique KS practices were identified based on theoretical justification of RBV and KBV that have potential to contribute towards banks performance.
- The unique and ground breaking significance of this study is that it is conducted in context of Pakistan and in particular on banks employees' which can be a source to examine existence of KS practices among banks' employees that shaped better performance of banks.
- The present study highlights the role of knowledge sharing and how it supports for competitive advantage. The basic premise behind is that organization performance can be improved through effective management and sharing of knowledge. Therefore, it has made radical significant, theoretical and practical contribution both for academicians and policy makers.
- For academicians, the study provides a comprehensive framework for knowledge management and its' sharing through testing a mediating model. Although, number of studies have tried to test the relationship between the components of knowledge management and performance (Bierly and Chakrabarti, 1996; Nonaka *et al.*, 1994; Gold *et al.* 2001; Zack *et al.*, 2009) and more recently Mills and Smith (2011), but these studies have produced inconclusive and inconsistent results. Therefore, this study have more

significance for academicians because it considers the KM strategy and intellectual capital as one of the critical success factors of KM, which have never been examined in earlier studies. In addition, present study tests a compressive model of critical success factors of KM as mediating variables between KS practices and performance.

- The present study is also very significant for academicians as it tests dynamic models which describe the relationship of KS practices with performance, KS practices with success factors of KM and success factors of KM with performance.
- For policy makers, this also provides comprehensive framework for successful implementation KM plan. Although, most of organizations in developing countries particularly in Pakistan strive to know the importance of KM and how it increase the organizational performance. Therefore, it examines the relationship among KS practices, success factors of KM and organizational performance. Furthermore, this study may also provide the initial breakthrough in preparing comprehensive KM plan, identifying key personnel to assign them the role as Chief Knowledge Officer. These initiatives may sharpen the organizations' performance through understanding the importance of success of factors of KM for knowledge sharing.

1.9 Delimitations and Scope

This study was based on certain delimitations which set boundaries (i.e. inclusionary and exclusionary decisions of conducting a research study) and determined the scope of study. The delimitations and scope of the present study has been delineated in the following ways.

1. The present study is confined to a specific geographic area in order to extract the more homogenous sample which restricted the extraneous variables such as cultural, ethnicity etc. that may influence KM driven performance of organization.
2. The present study is restricted to a specific setting of financial sector (banks) of Punjab, Pakistan.

3. As knowledge management is very crucial for sustainable performance and competitiveness of organization. Keeping in view the study considers only those respondents who had minimum 3 years of job experience in that bank.
4. The study considers only high committed KS practices (both explicit and tacit) in order to investigate the impact of KM driven performance through the mediation of critical success factors of KM and knowledge assets as it is the main research area which was selected in relation to its relevance with KS practices and performance facilitator.

1.10 Definitions of variables:

a. Knowledge Sharing (KS) Practices

KS practices have attracted substantial significance, as it provides potential benefits to individuals and organizations (Yi, 2009; Davenport and Prusak, 1998; Jonsson and Kalling, 2007). Nonaka and Takeuchi, (1995) shed light on two important categories of knowledge known as explicit and tacit knowledge. Tacit knowledge refers to implicit knowledge which is non-documented, unarticulated, non-expressible, based on cognitive thoughts and perceptions (i.e. embedded in minds of individuals in form of experiences and obtains from other people) and difficult to share (Polanyi, 1966; Wang *et al.*, 2006). In contrast, explicit knowledge refers to visible, documented, articulated, and constructible knowledge which can be stored independently (Junnarkar and Brown 1997; Nonaka and Takeuchi, 1995). However, Skyrme and Amidon (1997) argue that explicit knowledge is a systematic and formal knowledge easy to measure and codified in words or numbers. This formal knowledge therefore, can be obtained from various sources of organization including, company procedures, policies, written manuals, internal and external data forms.

Polanyi, (1958) provided the detailed description of formal and informal knowledge. Polanyi's in his study describes that tacit knowledge as intangible and non-verbal knowledge, difficulty to express or externalized and resides in the mind of people which provides the bases for decision making. However, in contrast explicit knowledge is a formal knowledge, easy to express and communicate and which is

available in the form of company's symbols, procedures, business processes and manuals. Similarly, Beijerese (1999) defines that explicit knowledge has ability to express in words, numbers, available in structured information, procedures and policies that constitutes a set of standardized practices which can be easily transmitted and shared among individuals. In contrast, tacit knowledge is informal, difficult to express and transfer due to its existence in peoples' minds therefore it is known as "people-bounded knowledge".

Above discussion concludes that KS practices among individuals, clusters and units are essential to create, share, capture and application of knowledge which enables the organizations to improve the capacity building and resource structuring which positively augment the firms' performance (Wang *et al.*, 2012; Lee and Sukoco 2007). In addition, KS practices is regarded as synchronization, collaboration and sharing of existing knowledge and expertise within the organization (Haas and Hansen, 2007) which encompasses a set of shared meanings and understandings of knowledge related to business processes with more concrete access to relevant information and knowledge (Gold *et al.* 2001; Liu *et al* 2005; Lin, 2007b).

Numerous studies conducted to identify KS practices in multiple ways within the organization such as "formal and informal" (Taminiau *et al.*, 2009; Zahra *et al.*, 2007) "explicit and implicitly" (Wang and Wang, 2012; f Quigley *et al.*, 2007) "solicit and voluntarily" (Teng and Song, 2011) "technology, business model and management practices" (McEvily *et al.*, 2000). This discussion suggests that knowledge may exist in implicit and explicit form within organization. Explicit knowledge sharing practices comprises all form of practices that are more formalized and commonly used within the organization. It can be easily identified, captured, altered and diffused alike organizational procedures, manuals and information system (Coakes, 2006).

Unlike explicit knowledge, tacit knowledge difficult to express in written. It normally exists in verbal or symbolic form and face to face interaction is an important source to share tacit knowledge. Holste and Fields (2010) point out that key to success for knowledge sharing is the employees' preference and willingness to share tacit

knowledge what they learn and know from external and internal environment. Human experience and knowledge are important source for tacit knowledge (Nonaka and Takeuchi, 1995). However, problems are inherited in tacit knowledge sharing due to employees' unwillingness to share knowledge, limited awareness, and inability to express and apply the context specific tacit knowledge in business procedures (Holste and Fields 2010).

b. Knowledge Management Strategy:

KM strategies used to capture and identify strategic procedures in managing knowledge base activities within the organization. The purpose of KM strategy initiatives is to encapsulate the appropriate equilibrium between internal and external knowledge that paramount firm's prerequisites or needs which turn to capitalize its resources most effectively (Bierly & Chakrabarti, 1996).

Extant of research has identified the various KM strategies.

“Codification and personalization” (Hansen *et al.* 1999), “Cognitive and community” (Swan *et al.* 2000), “Innovators, explorers, exploiters, and loners” (Bierly and Chakrabarti 1996), “Explicit-oriented and tacit-oriented” (Jordan and Jones 1997), “Conservative and aggressive” (Zack, 1999), “Pure procedure and pure expertise” (Bohn, 1994), “Codification and experience accumulation” (Singh and Zollo 1998), “Systems-oriented and human-oriented” (Choi and Lee 2002). However, present research is based on Choi and Lee (2002) typology and attempts to focus on system and human oriented KM strategy in order to uncover which one strategy more potentially influence the relationship for KS-driven performance.

c. Knowledge Infrastructure Capability:

Knowledge infrastructure capabilities are composite in nature and different constituents are used to build it e.g. technology, organizational culture, organizational structure (Gold *et al.*, 2001). Earlier research identifies the eminence of knowledge infrastructure capability to support the KM initiatives (Davenport and Volpel, 2001; Gold *et al.*, 2001; Paisittanand *et al.*, 2007). So, present study is based on Gold *et al.*

(2001) framework where technology, organizational structure and culture are considered as key determinants to exploit the knowledge infrastructure capability of banks.

d. Knowledge Process Capability:

Gold *et al.*, (2001) suggest that knowledge process capability refers to storing, transforming and transporting of knowledge in organizations' processes. Research indicates that knowledge process capabilities which are comprised of knowledge creation, capture, sharing and transformation are the core competencies of organization while managing knowledge assets (Gold *et al.*, 2001; Lee and Choi, 2003). Consequently, organization's knowledge process capability which is the sub set of knowledge acquisition, conversion, application and protection are the source of competitive positioning through exploiting knowledge assets in such a way which are difficult to copy for competitors (Gold *et al.*, 2001; Felin and Hesterly, 2007). Literature has acknowledged and identified many key facets of the KM process capability and categorizes into knowledge creation, transfer, and application (Spender, 1996; Skyme & Admidon, 1998). Further, DeLong, (1997) classifies the knowledge process capability into knowledge capture, transfer and usage.

e. Intellectual Capital:

Intellectual capital (IC) refers to knowledge base capabilities which are imperative for organizational survival and competitiveness (Teece and Teece, 2000; Stewart and Ruckdeschel, 1998). Literature defines IC as intangible resource which is a source of competency that leads to superior performance through value creation (Bontis, 1998; Subramaniam and Youndt, 2005; Roos and Roos, 1997). Huang, and Wu, (2010) postulated that a firm's competitive advantage is based on its ability to share and apply and innovative the knowledge. However, the convergence of opinion agreed the scholars, academician and policy makers to recognize IC as an intangible resource or asset used to generate value for the organization held by individuals, stored by organization's databases (Sullivan, 1999, Youndt *et al.*, 2004; Zharinova, 2011). Furthermore, they decomposed the IC into human capital (embedded

experience, skill and knowledge), structural capital (infrastructure processes, procedures, organizational structures, database, systems, patents, trade mark, and copy rights) and relational capital (strategic alliances with internal and external stakeholders).

1.11 Organization of the study:

The subsequent chapters of study are structured as follows:

Second chapter is based on empirical literature review of study which consists of seven sections. Section 2.1 try to constructs the relationship of knowledge-based view (KBV) with performance, Section 2.2 provides a detailed discussion on knowledge management and performance, Section 2.3 Links the KM with employee knowledge, Section 2.4 explains that how KM can be a source of competitive advantage, Section 2.5 develops the relationship between knowledge sharing (KS) practices and performance, Section 2.6 emphasizes that how KS brings innovation in production processes of organizations, and finally Section 2.7 explains the role of critical success factors of knowledge management in order to substantiate the KS-driven performance.

Chapter Three discusses the theoretical literature of study which is comprised of three sections. Section 3.1 briefly discusses the knowledge sharing practices both explicit and tacit and its relationship with performance. Section 3.2 provides detail discussions about critical successful factors of KM and its relationship with KS-driven performance and section 3.3 investigates the theoretical inter-relationships among KM Strategy, knowledge infrastructure capability, knowledge process capability and intellectual capital with performance.

Chapter four is the methodology chapter. It discusses the proposed methodology and describes the strategy of inquiry and methods to examine the proposed hypotheses.

Chapter five highlights the empirical results of study.

Chapter Six presents a discussion on the findings of the study and attempts to explain the consistencies and discrepancies of the results in relation to previous empirical research.

Chapter seven provides the conclusion of the study with implications for research, limitations of the study and some recommendations for future research.

CHAPTER 2

EMPIRICAL LITERATURE REVIEW

2.1 Knowledge-based view (KBV) and Performance

The resource based view (RBV) of an organization suggests that knowledge management (KM) has fascinated a substantial amount of attentions of researchers, academicians, policy makers and practitioners where knowledge management and knowledge resources are considered as valuable strategic assets determining the firms' competitive advantage (Barney, 1991; Karkoulia *et al.*, 2013). RBV is an emerging phenomena and its theoretical mechanism suggests numerous definitions. According to Barney, (1991) RBV are valuable, rare and imitable resources of organization which can be controlled to obtain superior performance and competitiveness. According to Wernerfelt, (1984) and Barney, (1991), one of the major part of strategic resources to theory of RBV postulates that organizations have bunch of resources depends upon manager's ability to cultivate, nurture and deploy these resources effectively in order to obtain competitive advantage.

Strategic management literature suggests that KBV is an emerging line of research based on RBV of an organization which is regarded as an essential source of sustainable performance and competitive advantage of firm (Winter, 1995; Grant, 1996). Literature also highlights that RBV claims that organization has bundle of tangible and intangible resources; when these resources are applied to organization that will generate various levels of performance outcomes which reduce the performance asymmetries. The emphases' of this study is KBV, where knowledge indicates that the value of intangible asset is a critical source for the long term success of organization. In a rapidly turbulence environment, tacit knowledge of employees is strategically important for firms to take corrective actions at crucial times (Quinn, 1992). As tacit knowledge is difficult to disseminate, however its' flow is based on effective deployment of KM practices. Nevertheless, Grant (1996) points out that primary function of embedded management processes is to create and integrate job related new knowledge within the individuals and across the firms.

Previous discussion asserts that RBV concentrates on firms' level resources which provide the unique platform to improve the productivity of organization which turns to lead superior performance outcomes (Peteraf, 1993; Wernerfelt, 1984). Firm identifies compound resources and attempt to maintain balance between exploitation of existing resources with new resources which lead to high profit volumes (Wernerfelt, 1984). Therefore, the aim of underlying research asserts that KS practices might be important determinant to improve the firms' performance through reduction of production cost, wastage of resources and improved product and service quality.

Further, KM capabilities consist of organizational culture and structure that are valuable for the firms to obtain better performance outcomes (Gold *et al.*, 2001). Recent research suggests that there is a dire need to differentiate between organizational resources and capabilities. Organizational resources are basic unit of analysis which can be used to obtain competitive advantage by integrating them in a systematic and unique way (Bharadwaj 2000). However, capabilities refer to abilities of organizations to integrate, assemble and apply for valuable resources for achieving particular goals (Lopez and Esteves, 2013). Further, capabilities are also refer as abilities of organization to execute certain tasks. Helfat and Peteraf (2003) categorized organization's resources into tangible or intangible assets that can be owned, controlled and managed by organization on permanent basis.

RBV provide construct approach which magnifies the relationship of organizational performance with modern equipped resources which basically develop the situation in which the firms have the long term competitive advantage (Wernerfelt, 1994). Prior discussion emphasizes that resources are important which are needed to be taken care of in achieving its strategic goals. RBV plays an important role in identifying and combination of resources which are critical for firms' sustainability which turns to increase the organizational performance (Barney 1991, Zack *et al.*, 2009). Similarly, Paisittanand *et al.*, (2007) asserted that KM capabilities are critical in determining the organizational performance.

Contemporary research in knowledge base economies have categorized the knowledge resources into knowledge assets and knowledge capabilities (Benitez-Amado and Walczuch, 2012; Marr and Moustangfir, 2005). These studies have also considered the IC or knowledge resources as primary tool for value creation and competitiveness rather physical or traditional capital which comprise of land, building, equipment or raw material etc. This sheds light on the significance of RBV and its smooth transition into KBV which is considered an indispensable ingredient in the knowledge economy especially in knowledge intensive industries (Chen and Huang, 2009). Recent research postulates that knowledge is a metaphor which can be captured, store, shared and transferred (Andriessen 2006; Bratianu and Orzea, 2013). Nonaka and Takeuchi's model of SECI provides a sound foundation for this metaphor of knowledge which indicates a process to transform the organization's tacit knowledge into explicit knowledge. This discussion suggests that KBV is primarily concern with knowledge creation, capture, transmission and application of knowledge resources or assets (intellectual capital) in all fields of human activities to improve organizational performance (Alavi and Leidner, 2001).

Further, studies also imply that knowledge process capabilities which comprise of knowledge creation, capture and transformation are the important sources for managing knowledge resources that consequently turns to deliver the competitive advantage through exploiting knowledge assets in unique way which are difficult to copied for competitors (Gold *et al.*, 2001; Felin and Hesterly, 2007; Lee and Choi, 2003). Hence, this study attempts to explore various KS practices and its impact on banks' performance in the presence of critical success factors of KM based on KBV of an organization.

Furthermore, there is a dearth of research to analyze impact of explicit and tacit KS practices on banks' performance through facilitating and mediating role of KM strategy, KM infrastructure capability, KM process capability and intellectual capital practices or knowledge assets. After critical investigation of relevant literature, theories, models and frame works, make it possible to bridge the most significant underlying research gap through mediating role of critical successful factors of KM (i.e. KM strategy, KM infrastructure capability and knowledge process capability

intellectual capital practices or knowledge assets) which jointly refers as “knowledge based view”.

2.2 Knowledge Management and Performance

Over the last few decades, KM is considered as an essential resource for the firm’s success. To compete successfully in a global marketplace, organizations need to realize the relationship with KS practices with KM strategy, KM enablers, KM process capability and KS practices in order to solve the complex problems within the boundaries of organization for KS driven performance. KM is a systematic view of the organization, helps to construct the innovative business methodologies and opens the new horizon for the success of organization. In a current claimant, it is viewed as practical approach to bring the intermediate changes in the organizational structure through new aggressive and defensive strategies in order to maintain the competitive advantage. Davenport and Prusak, (1998) viewed that KM is systemized process in which organizational internal as well as external environment information is acquired, gathered and shared. Further, Szulanski, (1996) argued that firms’ need to develop its internal communication for the enhancement of organizational productivity.

Different research studies in the past were conducted to explicate the relationship between KM and organizational performance (Mills and Smith, 2011;; Davenport and Prusak, 1998; Zack *et al.*, 2009; Lee and Choi, 2003; Gold *et al.*, 2001). However, Wu and Chen (2014) attempted to investigate the KM driven firms’ performance through knowledge resources including the knowledge assets and knowledge process capability in order to formulate the framework for KM to influence organizational performance in a better way. They investigated the impact of knowledge assets (e.g. human capital, relational capital, structural capital and informational capital) and knowledge process capability (i.e. creation process, transfer process, integration process and application process) on organizational performance (i.e. operational excellence, customer intimacy, product leadership and financial achievement) through mediating effect of business process capability and organizational learning. Findings of the study provide a broad set of evidence in support of two arguments related to KBV and business process capability (mediator)

where KBV suggests that knowledge assets have direct and relatively greater effect ($\beta=0.61$) on knowledge process capability as compared to business process capability ($\beta=0.22$). Further, results of study also illustrated that knowledge assets have relatively larger ($\beta=0.50$) and indirect impact on business process capability through the mediation of knowledge process capability as compare to direct effect ($\beta=0.22$) of knowledge assets on business process capability. Moreover, this study meets the theoretical reasoning under the proposed research model complies with two major objectives of study. First, this research established the possible relationship between knowledge assets and organizational performance. Secondly, study also suggested certain procedures in order to achieve KM driven performance based on KBV through mediation of business process capability where knowledge assets more substantially effect the business process capability through mediation of knowledge process capability rather than direct path of knowledge assets on business process capability.

Recently, many studies investigated the impact of KM capabilities (i.e. knowledge infrastructure and process capability) on firm's performance (Mills and Smith, 2011; Choi and Lee, 2003; Gold *et al.*, 2001). One of the important studies is conducted by Mills and Smith (2011) to examine the impact of knowledge infrastructure and process capability on firms' performance. The results of the study shed light that only knowledge application and organizational structure are directly linked with organizational performance. Further, this research provides solid insights that linking knowledge resources with performance facilitate the firms for making rational decisions and better management of knowledge drivers. Moreover, Wiig (1996) advocates that firm's performance can be enhanced through the acquisition and management of knowledge resources. For that purpose KS repository of employees is very important for successful implementation of knowledge creation process as well systematic apprehension, storage and diffusion of knowledge (Drucker, 1993) for sustainable performance of organization. Keeping in view KBV, this study attempts to bridge the research gap in two dimensions; that how the knowledge is shared or distributed among employees through standard operating procedures and practices; and how these standardized best practices augment the performance of firms in terms of four value discipline of performance (Zack *et al.*,

2009) including the product innovation, development and employee improvement (Haragadon & Fanelli, 2002). Managing current knowledge is imperative for creation of new knowledge which leads to positive performance outcomes in terms of improved products and services (Smith, *et al.*, 2005). Further research also implies that KM initiatives facilitate to consolidate the organization's human capital to get access on other knowledge assets e.g. structural and relational capital for better performance outcomes (Szulanski, 1996).

2.3 Linking knowledge management with employee knowledge

Strategy management literature highlighted the importance of employees' knowledge related to innovative and improved products and services (Liebeskind, 1996; Grant, 1996; Hansen, 1999). Employees identify, capture and share valuable tacit knowledge in order to meet organization's objectives. Nonaka & Takeuchi, (1995) suggested that learning process comes from individual level and evolves in social context of both within and across the organization. However, Zahra & George, (2002) asserted that for effective KM organizational culture is paramount which help to stimulate the knowledge development, digestion and intra dispersion. As firm's knowledge process capability is influenced by employees' knowledge productivity and their intent to capture, store and disseminate the knowledge which positively augments the performance outcomes of organization (Gold *et al.*, 2001; Choi and Lee, 2002).

Setting out previous discussion, KBV recommends that KM heightened the value of organization. Specifically in intermediate economies, where marketplace is dynamic and volatile, it has been ascertained that employees stock of knowledge and knowledge integration generate specific value for firms which enable the organizations to solve the complex problems in a unique way through sharing tacit and explicit knowledge. This helps to set out standardized best learning practices and procedures for gaining core competency and sustainable performance (Hsu, 2008; Law and Ngai, 2008). Nevertheless, recent studies argue that firm-level knowledge relies on individual's knowledge repositories which are vital to influence the

knowledge process capability of organization (Gold *et al.*, 2001; Kiessling *et al.*, 2009).

Huseman & Goodman, (1999) asserted that knowledge is a unique combination of information based on intuition, values and experience allowing organizational actors to apply it in a new situation and manage the change. Such varied characteristics of knowledge motivate employees to concentrate on different aspects of business (Conner & Prahalad, 1996). In addition, an individual who is new for a firm may also amplify firm's stock of knowledge without disordering the way it has been assimilated (Madsen, Neergaard, and Ulhøi 2003), who may perform a vital role in transmission of individual's implicit knowledge within the newly combined firm in order to develop the knowledge (Argote & Ingram, 2000; Kraatz & Moore, 2002).

2.4 Knowledge Management a Source of Competitive Advantage

In era of globalization, KM provides sustainable competitive advantage to survive in dynamic environment (Teece *et al.*, 1997; Subramaniam and Youndt, 2005a, 2005b). KBV states that KS practices help to improve the competencies of organization in terms of operational excellency (i.e. reduction of cost structure), improved decision making and innovative capability, better performance of R&D projects and sales volumes (Wang and Wang, 2012; Mesmer-Magnus and DeChurch, 2009). Similarly, few studies also assumes that KBV is a prime source of value creation for a firm through knowledge creation, dissemination and application of knowledge, which significantly push the firms' performance (Zaim *et al.* 2007; Zhou and Li, 2012; Liu *et al.*, 2005; Zack *et al.*, 2009). Competitive based view (CBV) claims that KM is very crucial for the firms to synchronize the certain elements on which basis a firm can gain the competitive positioning among the firms. These elements are like employees' willingness to share knowledge without considering the perceived cost of knowledge sharing to direct the future actions which help them to operationalize their strategies smoothly (Foss, 1996).

2.5 Knowledge Sharing Practices and Performance

In a competitive environment, management of intangible resources is very critical to survive in a global dynamic environment (Teece *et al.*, 1997; Subramaniam and Youndt, 2005a). KBV suggests that managing intangible knowledge resources incline to contribute in obtaining sustainable superior performance and competitiveness for organizations than tangible resources. KBV postulates that KS practices among individuals, groups and units are essential for organizations, to create, share, capture and application of knowledge which enables the organization to improve the resource structuring and capacity building of organization to improve the firms' performance (Wang *et al.*, 2012; Lee and Sukoco 2007). Furthermore, Haas and Hansen, (2007) view that KS practices as synchronization, collaboration and sharing of existing knowledge and expertise within the organization which encompasses a set of shared meanings and identifications of related knowledge (Gold *et al.* 2001; Liu *et al* 2005; Lin, 2007b).

Similarly, prior research asserted that Organizational performance and effectiveness can be enhanced through knowledge related practices (Wang *et al.*, 2014) because effective knowledge infrastructure and process capability help to construct the resource restructuring, thus enabling employees to make their jobs bit relax through sharing of knowledge (Gold *et al.*, 2001). Further, research also found that continuous learning, development of innovative culture supportive for R&D and employees' reluctance are important factors for KS which is beyond the scope of this study (Gold *et al.*, 2001; Wu, 2010; Wang and Wang, 2012; Marques and Simon 2006; Mills and Smith 2010).

Extant of literature emphasizes and highlights the role of KS practices through considering that how organizational climate, structure, diversity, internal and external relations, individual and team members behavior influence perceived KS practices driven performance (Xue *et al.*, 2011; Wang and Noe, 2010; Small, 2006). Literature also indicates that KS practices positively related with firms' performance as reported in both quantitative (Marques and Simon 2006 and Zack *et al.*, 2009; Choi and Lee, 2003; Simonin, 1997; Tanriverdi, 2005; Schulz and Jobe, 2001) and qualitative

studies (Nonaka, 1994; Davenport and Prusak, 1998; Massey *et al.*, 2002). Moreover, Zack *et al.*, (2009) concluded that KS practices significantly related with intermediate measures i.e. operational performance and non-operational performance i.e. customer intimacy and product leadership.

Nevertheless, there is a scarcity of literature related to examine impact of KS practices on organization performance through the mediation of comprehensive knowledge based view of the organization. Even though extant of literature exhibits that KS practices improve the performance of firms through increasing in sales volume, better services, improve decision making and innovativeness (Wang and Wang, 2012; Huang *et al.*, 2010) but still the following question remain unaddressed; Does the knowledge based view i.e. KM strategy, KM capability (i.e. knowledge infrastructure and process capability) and IC practices (i.e. human, structural and relational capital) mediate the relationship between KS practices and banks performance or influence directly?

Most of the organizations are unable to recognize the KS practices which are very important tool to share competitive knowledge in this modern era. However, some of the practices which should be focused by the firms are as follows;

- 1- Development of new ideas and knowledge sharing.
- 2- Cognitive learning environment.
- 3- Understandability of the organizational structure.
- 4- Commencement of the new research and development projects.
- 5- Competitive based analysis.

Earlier studies have established the different causal relationships between KM initiatives and firm's performance even after the study of Davenport (1999) who found the positive relationship between KS practices and firms' performance indicators. Such KM initiatives encourage the strategic capabilities of firms like both financial and non-financial performance through improving customers' feedback,

product orientation and operational skills (Gold et al., 2001; Smith and Mills, 2011). Further, intermediate factors improve the performance outcomes where effective KM initiatives always bring the positive improvement in terms of financial and non-financial aspects of management (Tenriverdi, 2005). Moreover, KM initiatives mean to incorporate those activities such as knowledge process capability which are related to the creation, transfer and implementation of knowledge which is jointly also referred to as an important component of KBV of organization.

Earlier discussion suggests different inherited benefits of KS practices with respect to firm performance, which are as follows;

- 1- The ability to find and transfer the existing knowledge.
- 2- The ability to create new knowledge and replace the content of existing knowledge.
- 3- An organizational environment that inspires the knowledge sharing behavior.
- 4- A cognitive environment which explores innovative knowledge skills.

Marques and Simon (2006) pointed out an empirical connection between KS practices and firms' performance in telecommunication and biotechnology industries. This study found that conceptualization of KS practices support the innovation in knowledge intensive organizations whereas theoretical model of KS practices also indicate a positive incident on firms performance. Further, study also suggests that there is no robust approach to determine the relationship between KS practices and firms' performance. However, to obtain benefits, an organization needs to conceptualize more KS practices as well different methods rather analytical approaches.

Davenport (1999) reported the relationship between KS practices and firm's performance where balance sheet, market value and exchange value are considered important determinant for firms' performance. This study found the casual relationship between KS derivatives and firm's performance. Further, this study also concludes that KS practices have a positive impact on financial performance through a mediating effect of project performance. Hence, KS practices are imperative for

employees for generation and sharing of innovative ideas to carry out work related tasks. Moreover, they asserted that innovative ideas and creativity comes with the introduction of extensive KS practices in organizations which help to improve the business process capability (Marques and Simon 2006).

The KBV is the most emerging line of research which helps to identify and determine the firm's capabilities and its relationship with its performance. It provides new eye to understand stock of knowledge in the firm and flow of knowledge into the firm (Decarolis and Deeds, 1999). Decarolis and Deeds (1999) argue that KBV of an organization is the stock and flow of knowledge assets which positively influence the performance outcomes, specifically in context of biotechnological sector which is regarded relatively more knowledge intensive sector. In addition, this study also concludes that stock of knowledge assets (i.e. number of products and number of times) more substantially influence the biotechnological sector performance than that of flow of knowledge assets. However, maintenance of knowledge assets is important for sustainable growth and performance of business. These assets cannot be easily emulated and deal in factor market (Barney, 1986).

Schulz and Jobe, (2001) found a positive connection between KS practices and performance outcomes. Lee and Sukoco, (2007) suggested that high performance outcomes cannot be achieved without knowledge resources unless there are not utilize optimally which is a mandatory tool for the accomplishment of strategic goals of the organization. Keeping in view this argument, KS practices perform a vital role by floating strategic knowledge which helps to enhance the efficiency of knowledge assets that turns to improve the value based capabilities of an organization. Further, O'Dell *et al.*, (2003) affirmed that organization implement the KS practices in order to enhance the value based capabilities to obtain competitive positioning among firms such as innovation of products, customers' retentions, and operational excellency are basic and unique value based capabilities of an organization which make it possible to differentiate from others. KS is the integral part of KM, relied on different resources such as social infrastructure, organizational climate, technology and KM strategies (Alavi & Leidner, 2001). These resources are the important factors while evaluating the KS-driven performance (Grant, 1996; Mills and Smith, 2011; Gold *et al.*, 2001).

The effective KM stems when different resources are combined together at different levels to enhance the value based performance where unique combination of resources provide an opportunity to capture the market share (Zaim *et al.*, 2007). In this regard, Gold *et al.*, (2001) model laid the foundation and highlighted the important factors for effective management of knowledge for KS-driven performance and further shed light on insights for KS which calls for future research.

Based on above discussions, it may be concluded that the KS practices are indispensable in KM system where the success or failure of this system based on KS and KM capabilities. KS practices improves the decision making capabilities of managers in terms to direct the future course of actions related to product development and innovation which provides the competitive edge to firms in local and foreign markets (Miller and Shamsie, 1996). However, Gooderham *et al.*, (2011) argued that the fundamental element in KS is the “social capital” in which employee’s behavior reflects their social relationship with other employees and if the trust and friendly environment is created in the organization then the exchange of information and knowledge will be improved than normal firms’ learning environment without considering the perceived cost of KS (Small, 2006; Xue *et al.*, 2011; Down, 2001; van den Hooff and De Ridder 2004).

2.6 Knowledge Sharing and Innovation

In a rapidly changing environment where intense competition, transition of technology and dynamic demands of customers’ impelled the organizations for competitiveness as is a need for survival (Black and Synan, 1997; Reus *et al.*, 2009). In this regard, KBV use to determine the firm’s capabilities and its relationship with performance and innovation (Nonaka, 1991; Nonaka and Takeuchi, 1995; Subramaniam and Youndt 2005). In this scenario, innovation is observed a crucial mechanism for competitive advantage and a strategic resource for organization performance (i.e. reduction of cost, improved the quality of products and services) (Salaman and Storey, 2002; Eren 1982). In this modern era knowledge is the main strategic resource of the firm (Yang, 2008). In this regard, KS practices in the context of KBV facilitate to integrate or combine the scattered knowledge which improves the

creativity and innovative capability of firms to gain ultimate performance outcomes (Gao *et al.*, 2009). Prior research suggests that knowledge transfer or flow among managers bring out innovation to stay competitive in transitional environment (Hansen, 1999; Tsai, 2002; Mowery *et al.*, 1996; Gupta and Govindarajan, 2000). Literature exposed a close link between KS and innovation (Nonaka, 1991; Nonaka and Takeuchi, 1995; Barquin 2001; Zhi-hong *et al.* 2008; Zhi-hong *et al.* 2008; Zhi-hong *et al.* 2008; Cummings, 2003). Drucker (1954) was first, who highlighted the significance of “innovation capability” for achieving competitive advantage in a volatile environment. Burgelman *et al.*, (2004) argued that innovation capability encompasses certain set of characteristics which facilitate to formulate the innovative strategies and ability to create and introduce technological improvements.

Subramaniam and Youndt (2005) advocate that organizations cultivate the fruit of innovation through knowledge creation process to facilitate the business ventures to update the content of existing knowledge ultimately to improve business outcomes. In addition, Du Plessis (2007) and Lundvall and Nielsen (2007) point out that knowledge creation process bring innovative ideas in organization which contribute to exiting knowledge. Knowledge creation is an on-going process which turns to overcome the individual’s constraints and barriers in terms of knowledge formation and sharing of new knowledge (Nonaka *et al.* 2006) which enables the organization to solve the complex problems through sharing of tacit and explicit knowledge.

Saenz *at el.* (2012) argue that an organization has many mechanisms such as information and communication technology (ICT), personal interactions and embedded management processes work as facilitator to make knowledge creation and sharing process more effective. “On-line discussion forums, blogs, knowledge repositories and intranets and in some other cases, interpersonal interactions among employees such as mentoring, coaching and employee’s functional rotation are crucial mechanisms to make knowledge creation process more operative for innovation” (Saenz at el. 2012, p.920). Further, they explained that organizations not only rely on these ICT-based and interpersonal mechanisms, also focused on embedded management process for knowledge creation.

Teece and Augier, (2009) affirmed that “dynamic and innovative capabilities” of an enterprise allows “shaping and reshaping”, “configure and reconfigure” knowledge assets in order to adapt the ever changing technology, dynamic markets demands to remove the zero profit condition (which allow the firms to cover only its cost of capital). Such innovative capabilities allow the organization to maintain competitive positioning and reshape the existing knowledge embedded in products and services and business models with update knowledge by adding new product features. As discussed earlier, organization has several mechanisms as ICT based (Dalkir, 2005; Davenport, 2007) and face to face interactions (Wiig, 2004), such initiatives encourage the organization KS process and subsequently innovation.

Saenz *et al.* (2012) conducted a study to empirical test the impact of different mechanisms (i.e. management processes, ICT based and personal interactions) on innovation capability (i.e. generation of new ideas and innovative project management) of medium and high tech Spanish and Colombian’s companies. The results of study reveal that two mechanisms namely interpersonal interactions and embedded management processes significantly influence innovation process capability of firms except ICT based mechanism. Further, study provides strong evidence that all the above mechanisms laid down sound foundation to frame KS capabilities in medium and high-tech companies. Nevertheless, study also found that generation of new ideas and innovative project management has a significant influence on performance of medium and high tech Spanish’s firms, whereas in case of Colombian firm’s only innovative project management has a paramount and significant impact on performance.

Recognizing the growing importance of knowledge creation process, as it should not be apart from routine business processes and it must permeate in day to day management processes (Saenz *et al.* 2012). As ICT based KS sharing practices are computer based activities that enables an organization to capture, store, codify and transfer the organization’s knowledge into organization business processes. Such initiatives facilitate the organization for innovation through development of new products and services as per customer’s needs. Strategy formulation, organization design and control are major elements of management process which encompass

innovation in routine business processes. As management processes encompass strategy formulation where organizations set their goals and develop plans (Simons, 1995). In this discourse, external and internal analysis is elementary; conducting external analysis organization identifies opportunities and threats in a competitive environment and determines the ways how to compete in a competitive environment (Saenz et al. 2012). “So far internal analysis detects strengths and weaknesses of organization, as well realizes which resources and capabilities are likely to be a source of competitive advantage” (Barney and Hesterly, 2010). Likewise, organizational structure and culture are also major pillars where organization can manage and control the activities to meet its objectives. More explicitly, organizational structure refers to formal set of activities to control people behaviors and actions as they coordinate to each other (Etzioni, 1964; Jones, 2013), however organizational culture is the shared values, beliefs and norms that regulate people communications.

Setting out earlier discussions, the knowledge creation in management process encompasses exchange of information, ideas and thoughts that articulates the external and internal analysis; coordinates the individual’s interactions in organization; and need to take corrective actions in order to retain the organization on track (Saenz et al. 2012). Such knowledge sharing practices are particularly framed in embedded management processes which can be grounded based on ICT mechanisms or personal interactions; hence facilitating the innovation through improved products and services. Finally, literature reveals that innovation is imperative for the survival of firms, and need to identify and share knowledge that yields the innovation capabilities and performance. Knowledge sharing practices is the answer of above argument that improves the innovation capabilities and performance. Barquin (2001) argued in order to encourage the innovation; organizations need to encompass KS practices.

2.7 Critical Success Factors of Knowledge Management

2.7.1 Knowledge Management Strategy

Knowledge management strategies can capture and identify strategic procedures in managing knowledge base activities in organizations. The purpose of such strategic initiatives is to encapsulate the appropriate equilibrium of internal and external knowledge that paramount firm's prerequisites or needs which turn to capitalize its resources most effectively (Bierly & Chakrabarti, 1996). However, there is still lack of consensus to adhere the concept of knowledge and knowledge management strategy in KM circles. Zack (2002) argued that term knowledge strategy is a competitive strategy which comprise of intellectual resources and capabilities of a firm. The purpose of this strategy is to find out which knowledge is strategically most important for long term performance of business (Zack 2002). In contrast, knowledge management strategy encompasses strategic plans in order to define and formulate the processes, tools and infrastructures required to manage the knowledge gaps and its flow more effectively (Zack 2002).

Extant of research has identified and described the various knowledge management strategies. Jordan and Jones (1997) found that there are generally two types of strategies which exist within the context of organization namely explicit and tacit oriented strategy. The foremost objective of these two strategies is to maintain a balance between the strategies and led the way towards better firm performance through sharing of innovative ideas (Carr and Kaynak 2007; Wang and Wang 2012). Tacit-oriented strategy is informal (mutual interactions, face to face discussions and social networks) acquisition, storage, diffusion and sharing of internal knowledge. In contrast, explicit-oriented strategy refers to formal (systematic) acquisition, storage, diffusion and sharing of external knowledge (Keskin, 2005).

As KM strategy has attracted much of executive's interests as a corporate business strategy due to its capability to innovate, competitiveness, and ability to generate the profit and value for the organization. The generic purpose of KM strategy is to identify the knowledge gap (what knowledge organization must know and what

knowledge knows about the organization). Further, strategic management literature suggests that RBV has shifted to KBV of the organization where knowledge is considered as an essential factor leveraging the competitive advantage thus enabling organization's capacity to innovate (Kogut and Zander, 1992). Nevertheless, KBV literature suggests that organizations normally confronted with two types of strategies namely aggressive and conservative strategy (Zack, 1999). Firms that concentrate on conservative strategy tends to focus on internal knowledge while in aggressive strategy firms emphasis on external knowledge (regardless any organization's boundaries). Zack (1999) concluded that firms concentrate on aggressive strategy would perform better as compare to those who have least concern with aggressive strategy.

Swan *et al.*, (2000) discuss further two important KM strategies i.e. cognitive and community strategy. Cognitive strategy refers to flow of knowledge through information technology whereas community strategy emphasizes flow of knowledge through social networks or interactions which is more effective for organization.

Singh and Zollo (1998) observe the influence of tacit and codified knowledge strategies on performance and determined that tacit-oriented KM strategy more positively the influence the performance outcomes provided that task characteristics are highly homogeneous while codified KM strategy is more relevant with when task characteristics are not homogenous. This indicates that organizations must align their KM strategies based on task characteristics.

Choi and Lee, (2002) assert that organization may focus on system oriented and human oriented or both KM strategies. They postulated that system orientation strategy, formally capture and store the codified knowledge in business processes through information technology whereas, human orientation strategy attempts to capture or acquire the tacit knowledge via social interactions or face to face discussions.

Keskin (2005) state that the choice for selection of appropriate KM strategy is situational which relies on knowledge intensive behavior of organization. Keskin's

this argument begins the debate in KM circles where Haggie & Kingston, (2003) pointed out that it is difficult for organization to select suitable KM strategy at first hand among multiple KM strategies due to ambiguity of situation. However, KM literature recommends that implementation of KM strategies relies on three outlooks namely: focused view, balanced view and dynamic view. Focused view emphasizes only on one strategy; balanced view strikes to maintain the moderate level between two strategies; and dynamic view recommends that firms align their strategies based on type of knowledge entity and its' characteristics (Choi & Lee, 2002). Below table represents the different types of KM strategies which have been classified based on type of strategies, authors' and its descriptions. However, present study attempts to focuses on system and human oriented strategy (dynamic view) and how it helps to encourage KS practices in organization more specifically to boost the KS-driven performance.

2.7.2 Knowledge Management Capabilities

For linking the KS practices with firm's performance, RBV provides a fruitful lens to understand the underlying relationship (Mills and Smith 2011). RBV postulates that firms have package of knowledge resources which facilitate them to achieve competitive advantage and sustainable performance outcomes (Barney, 1991; Wernerfelt, 1984). Studies argue that term "resource" and "capabilities" are composite in nature which used interchangeably (Sanchez *et al.*, 1996; Gold *et al.*, 2001). However, Grant (1991) advocates that resources are intangible phenomena provide input to commence the knowledge production process whereas capabilities are abilities to employ the knowledge potentially. Above discussion, implies that KM enables to integrate knowledge resources into capabilities (Maier and Remus, 2002). Various resources are used to form the critical factors of KM. These are organizational culture, structure and technological infrastructure which jointly referred to as 'knowledge infrastructure capability'. However, knowledge acquisition, conversion, application and knowledge protection are important determinants of knowledge process capability. These knowledge resources i.e. knowledge infrastructure and process capability jointly known as knowledge management capability (KMC) of an organization is positively linked with different measures of organization performance (Zack *et al.*, 2009; Lee and Sukoco, 2007; Gold *et al.*, 2001).

KM capability is composite in nature (e.g. knowledge enablers and processes) and most of the firms' possess different levels of these resources. These composite natures of KM capabilities are normally unique, rare and non-imitated combined together to provide distinctive competencies which lead to sustainable firm's performance that varies across the firms (Zack *et al.*, 2009). Prior research also acknowledges that most of components of KM capability positively influence the organizational performance (Zaim *et al.*, 2007; Smith and Mills, 2011). As this study is based on Gold *et al.* (2001) typology which divides the KM capabilities into knowledge infrastructure capability/KM enablers and knowledge process capability.

2.7.2.1 Knowledge Infrastructure Capability/Knowledge Management Enablers

Extant of studies acknowledge and classify the KM capabilities into knowledge infrastructure and knowledge process capabilities (Mills and Smith 2011; Grant 1991; Gold *et al.*, 2001) which suggest that KM enablers help to underpin the KS practices (Paisittanand *et al.*, 2007). Knowledge infrastructure capabilities are composite in nature and different constituents are used to build it (e.g. technology, organizational structure and culture) which are the key elements to exploit the knowledge infrastructure capability of an organization. Syed-Ikhsan and Rowland (2004) carried out an empirical investigation in Ministry of Entrepreneur Development (MED) of Malaysia to demonstrate the relationship between knowledge infrastructure capabilities and organizational elements. They identified the five knowledge infrastructure enablers (organizational culture, organizational structure, technology, people/human resources and political directives). This study used the bivariate and Spearman's rank-order correlation in order to test the proposed hypotheses. The results of study revealed that knowledge enablers could successfully influence KM process in organizations. Further, they found that one of the enablers e.g. organization structure, need more focus to influence knowledge transfer process within the organization.

Ngoc (2005) conducted an empirical investigation to disclose the knowledge transfer issues in five large Vietnam's IT companies. For that purpose, study collects the data from 104 middle and senior managers working in five companies. This study postulates that transformational leadership, organizational communication system, culture and IT are vital KM enablers. The findings of study revealed the positive relationship between transformational leadership, organizational communication systems, information technology, and knowledge transfer. Furthermore, study also suggests that organizational culture and transformational leadership are the two strongest estimators of knowledge transfer whereas IT has nominal influence on knowledge transfer.

Chan & Chau, (2005) asserted that "knowledge infrastructure capability" also referred as "knowledge enablers" of organization is an important driver for KM

initiatives in terms of codifying and sharing of knowledge among individuals. However, Laupase (2002) conducted a study to investigate the process of transforming organization's tacit knowledge into explicit knowledge in management consulting firms of Australia. In this discourse, semi structured interviews were conducted to address the research question that how organization's knowledge conversion process take place in two internationally and one nationally recognized management consulting firms. The in depth interview investigation probes out three major factors (i.e. organization structure, culture and information technology) which support the knowledge conversion process in organizations. However, the survey results indicate that in all the three firms' technology is not the prevalence practice in management consulting firms when focusing knowledge conversion process in organizations. The most important issue is to constitute an effective organizational structure and culture to support the knowledge conversion processes.

Suitable information communication technology (ICT) infrastructure is indispensable for effective knowledge sharing practices. It is an important constituent for knowledge infrastructure capability which helps for knowledge generation and dissemination and as well integration of knowledge resources. However, most of the studies have failed to conclude any positive relationship when linking IT with organizational performance (Webb and Schlemmer, 2006; Seleim and Khalil, 2007). Likewise, Powell and Dent-Micallef (1997) and Clemons and Row, (1991) suggested that IT itself do not illustrate any positive connection with organizational performance except when it is tested with other human and business assets.

Culture is the shared values, beliefs and propositions of employees which influence KS practices in organizations (Mills and Smith 2011). Sin and Tse (2000) illustrated that cultural dimensions for example service quality, customer orientation and informality and innovation significantly influence organizational performance along with market effectiveness. Although, organizational culture is knowledge embedded and considered much important for--execution of KS practices e.g. ability to develop and protect the knowledge, ability to encourage continuous learning in the organization, ability to encourage R&D in the organization, ability to share the knowledge and ability to augment competences among employees (Marques and

Simon 2006; Zack, Mckeen and Singh 2009; Mills and Smith 2010). Thus positive cultural changes provide significant momentum to overall performance (Richert 1999; Bhatt 2001; Sin and Tse 2000).

Organizational structure determines the rules and regulations and reporting procedure (Herath, 2007) thus building the way of coordination and sharing of knowledge among employee (Mills and Smith 2010). Effective organizational structure provides good corporate governance and enabler for the flow of knowledge resources from hierarchical to more horizontal level of organization (Mills and Smith 2010). Such information flow adds momentum to improve organizational performance both in service and financial perspective (Richert, 1999; Marques and Simon 2006; Zack, Mckeen and Singh 2009; Mills and Smith 2010).

2.7.2.2 Knowledge Process Capability

In the light of earlier discussion, KBV of organization suggests that KM has fascinated a substantial amount of attentions of researchers, academicians, policy makers and practitioners where knowledge resources are considered as valuable strategic assets to determine the firms' competitive advantage (Barney, 1991; Karkouliau *et al.*, 2013). However, in view of RBV, which is an emerging phenomena and its theoretical mechanism provide numerous definitions. According to Barney, (1991), organizational superior performance and competitiveness are based on valuable, rare and non-imitated resources of organization which can be controlled in a better way. One of the major parts of strategic resources to theory of RBV is that organizations have bunch of resources and it is manager's ability to cultivate, nurture and deploy these resources effectively in order to obtain competitive advantage (Wernerfelt, 1984; Barney, 1991).

According to Andriessen (2006) and Bratianu and Orzea (2013) knowledge is a metaphor which can be captured, store, shared and transferred. Nonaka and

Takeuchi's model of SECI provides a sound foundation for this metaphor of knowledge which indicates a process to transform the organization's tacit knowledge into explicit knowledge. This concludes that KBV is primarily concern with knowledge creation, capture, transmission and application of knowledge resources or assets (intellectual capital) apply in all fields of human activities to improve firms' performance (Alavi and Leidner, 2001). However, Gold *et al.*, (2001) and Lee and Choi, (2003) typology points out that knowledge process capabilities comprise of knowledge creation, knowledge capture, knowledge sharing and knowledge transformation are the core competencies of organization while managing knowledge assets. Consequently, these capabilities provide the source of competitive advantage through exploiting knowledge assets in a unique way which is difficult to imitate for competitors (Gold *et al.*, 2001; Felin and Hesterly, 2007).

Literature have acknowledged and identified many key facets of KM process capability which categorizes into creation, transfer, and use (Spender, 1996). DeLong, (1997) classifies the knowledge process capability into capture, transfer, and use of knowledge. Apart from that many few studies categorizes knowledge process capability into identification, acquisition, development and sharing and application of knowledge (Probst *et al.*, 2000). Shin *et al.*, (2001) incorporate all the terminologies used by several authors and finally categorize the KM process capability as creation, storage, distribution, and application.

Gold *et al.*, (2001) argues that process capabilities are required for leveraging the infrastructure capability. They have identified four key dimensions of knowledge process capabilities "acquiring knowledge, converting it into useful form, applying or using it, and protecting it". In current era, it is widely accepted consensus among researchers that there are four major measurements of knowledge process capability including the knowledge acquisition, protection, conversion and application (Gold *et al.*, 2001; Park, 2006).

Table # 3 Classification of Knowledge Process Capability

	Creation	Storage	Distribution	Application
Holzner etc.(1979)	Consciousness	Extension	Transformation	Implementation
Pentland (1995)	Construction	Storage	Distribution	Application
Nonaka etc.(1995)	Creation	Access	Dissemination	Application
Demarest (1997)	Construction	Embodiment	Dissemination	Use
Daal etc. (1998)	Creation	Draw-up	Dissemination	Apply Evaluate
Davenport (1998)	Creation	-----	Transference	Asset management
Liebowitz (1999)	Capture	Store	Share	Apply/ Sell
Alavi and Leidner, (2001)	Creation	Storage/retrieval	Transfer	Application
Grover and Davenport (2001)	Generation	Codification	Transfer	Realization
Oshri <i>et al.</i> , (2008)	Generation	Codification	Transfer	Realization
Gold <i>et al.</i> , (2001)	Acquisition,	Conversion,	Application,	Protection
Shin <i>et al.</i> , (2001)	Creation,	Storage	Distribution	Application
Tanriverdi, (2005)	Creation,	Transfer,	Integration,	Leverage

2.7.3 Intellectual Capital (IC)

In today's ever changing environment, the world is rapidly emerging into knowledge base economy. This emerging phenomenon, recognize the significance of intellectual capital in twenty first century to get sustainable competitive advantage. The apparent difference between old and new companies is that companies operating in knowledge base economy generate value through application of knowledge. Most of experts realize that knowledge will significant predictor of economy growth in near future due to application of knowledge in knowledge intensive industries and can be characterized as crucial element of product of production for superior performance. Intellectual capital (IC) is knowledge embedded refers to knowledge base capabilities of an organization which are imperative for organizational survival and competitiveness (Teece and Teece, 2000; Stewart and Ruckdeschel, 1998).

Literature defines intellectual capital as intangible resources, capabilities and a source of competency that lead to superior performance and value creation efficiency of organization (Bontis, 1998; Subramaniam and Youndt, 2005; Roos and Roos, 1997). Firm's competitive advantage is based on its ability to share and use of knowledge (Huang, and Wu, 2010). Initially, Stewart (1994) was pioneer to introduce the concept of IC and used it to separate the organization's book and market value. Extant of literature defined IC in different ways including; Edvinsson and Malone, (1997), "Knowledge assets that can be converted into value and unable to capture fully in balance sheet", Sharabati *et al.*, (2010) and Stewart and Ruckdeschel, (1998), "intellectual material like information, intellectual property rights (IPRs), experience and expertise, innovation and creation, systems and programs, research and development (R&D) that form competitive advantage".

Knowledge assets are also called intangible assets or intellectual capital of an organization gained through experience and learning of the employees and used in the value creation process to improve the organizational performance (Marr and Moustangfir, 2005; Miller *et al.*, 2007). The success of an organization is primarily based on the management of IC (Finn and Torgeir, 2008). Guthrie (2001) suggests that successful organizations not only gain benefit from the tangible assets, they also

extensively rely on intangible assets. Measuring the value of intangible assets is very important for organization because these are scarcely to imitate for competitors and thus providing sustainable competitive advantage. Extant studies explores the relationship between IC and organizational performance (Chong and Lin, 2008; Mehralian *et al.*, 2012). Furthermore, the literature of KM also deals with IC processes and practices (Sabherwal and Sabherwal, 2005). KM and IC are related deeply interconnected which encompass broad set activities from knowledge creation to knowledge leverage (Zhou and Fink, 2003; Wiig, 1997). These are mutually supportive and integral for sustainable performance of firms' (Rezgui, 2007; Lin *et al.*, 2008).

As IC has been conceptualize in different ways but it is bit difficult to identify. Now there is a convergence of opinion which agreed the scholars to recognize IC as an intangible resource or asset used to generate value for the organization held by individuals, stored by organization's databases (Sullivan, 1999, Youndt *et al.*, 2004; Zharinova, 2011). Sveiby (1998) categorizes the IC as "internal capital, external capital and competence". However, few studies illustrate IC as human, structural and relational capital practices (Rehman *et al.*, 2011; Johannessen *et al.*, 2005; Sharabati *et al.*, 2010; Herremans *et al.*, 2011; Namvar *et al.*, 2010).

2.7.3.1 Human Capital

Human capital is a principal constituent of IC of an organization used for value creation (Stewart, 1997; Bontis, 1998; Edvinsson and Malone, 1997). It represents the collective ability and embedded stock of knowledge to get best solutions from their employees (Bontis, 1999). It is the tacit knowledge, skill and inherited intellectual ability of individuals utilized by them for sustainable organization's growth and value generation (Schultz, 1961; Bontis, 1998; Edvinsson and Malone, 1997). Moreover, Davenport and Prusak (1998, p. 49) refers "human capital as intellectual investment that workers bring out in their work or organizations". Furthermore, this evidence of consensus discusses human capital as embedded human skill, expertise and experience, stock of knowledge to obtain certain

targets like organization competence and performance (Campbell *et al.*, 2012; Nick and Alexander, 2007; Rehman *et al.*, 2011).

It refers to the skills, knowledge, creativity, capability and experience of employees used to create value (Edvinsson and Malone, 1997). The growing significance of HC, made it one of the core constituents of IC in many knowledge oriented industries such telecommunication, pharmaceutical, software and financial sector. As it is valuable strategic resource (Bontis, 1998), so making knowledge workers more productive depends on individual's willingness and attitude to share the knowledge (Drucker, 1999a). Furthermore, study also contends to enhance knowledge workers productivity there is need to change the basic attitude of individuals and intention to share the job related knowledge both for knowledge and manual workers. This discussion infers that skilled and experienced HC constitutes outstanding role in generation and diffusion of new knowledge related ideas (Snell and Dean, 1992). To achieve such outstanding objective, knowledge workers require capital investment in terms of higher education and professional training courses during the job to upgrade their skill and knowledge (Drucker, 1993). Such IC initiatives are so much vital for organization's HC to amplify knowledge capability of individuals that expose the organization towards technology boundaries (Hill and Rothaermel, 2003).

2.7.3.2 Structural Capital

SC is second important constituent of IC. The term SC is used interchangeable to organizational capital of the organization. It refers to institutionalized knowledge and experience that resides within the organization and utilized through the supportive infrastructure processes, databases, manuals, systems and patents of the organization that also enable the HC to function properly (Youndt *et al.*, 2004). It determines organization's capabilities to meet internal and external challenges. Therefore, productivity of knowledge workers always desire strong structural capital management that restructures the work spontaneously to become the part of system (Drucker, 1999a). Significant feature of knowledge management practices that it creates new and job related knowledge and disseminate it through products, services and systems (Nonaka and Takeuchi 1995). As, organizations

employ both internal and external sources to generate knowledge. For that purpose Information technology is a powerful tool of structural capital, which supports the management of intellectual assets to enhance the value creation of employees (Hibbard and Carrillo 1998).

It consists of patents, brands, copyrights, licenses, trademarks, organization routines, structure, culture, management processes and reward systems that support employees to work effectively and efficiently to achieve better performance outcomes. It also refers to innovation capital means the ability to innovate and create new product and services and process capital i.e. organization processes, techniques, systems and tools (Van Buren, 1999). Hence, investment on technology and management processes improves the SC of organization.

Management should produce the certain environment essential for knowledge creation through relationship building by providing time, space, attentions and opportunities Nonaka *et al.*, (2000). Management intensions to build infrastructure capabilities e.g. meeting rooms, computer networks and other periodic structured activities intensified the organization's knowledge (Katila and Ahuja, 2002). Moreover, structural capital reinforces the prevailing knowledge to stimulus the innovative capabilities of organization (Subramaniam and Youndt 2005). The supportive infrastructure processes and databases of the organization enable the HC to work properly. It is a valuable tactical asset consists of non-human assets (Edvinsson and Malone 1997) and employees do not take off while leaving the organization at day end. Therefore, it recognized as all procedures, organizational structures, database, information systems, patents, routines, procedures, trade mark, copy rights and technology, moving knowledge and organizational culture essential for organization's performance and reputation (Cabrita and Vaz, 2006; Karagiannis *et al.*, 2008; Zangouinezhad and Moshabaki, 2009).

In addition, Sharabati *et al.*, (2010) decompose SC into systems and programs, R&D and IPRs are called as non-human warehouses of knowledge which can be protected in the form of patents and copyrights (Roos *et al.*, 1997).

2.7.3.3 Relational Capital

RC also refers to social capital is the embedded knowledgeable relations with internal and external stakeholders (Roos *et al.*, 1997) where maintenance of strategic alliances with internal stakeholders (i.e. employees, management etc.) and external stakeholders (customers, suppliers, competitors etc.) are the sources to increase the skills, capabilities and competitiveness of organizations (Prahalad and Ramaswamy, 2000). These knowledge base learning capabilities exists in relation with internal-external stakeholders (Bontis, 1998; Kale *et al.*, 2000; Dewhurst and Navarro, 2004; De Clercq and Sapienza, 2006; Kong and Farrell, 2010). Social resources laid the foundation of knowledge sharing it splits into two categories personal resources in which individuals applied their own capabilities and skills in the organization and other is social resources in which the employees learn from each other's and remove the flaws of their works (Lin, 2001).

Relational Capital is the measure of organization external relationships such as customers, suppliers, external stakeholders and even competitors with which it has communication and goes through partnership, alliances, purchase and sell contracts. Relational capital is important for valuation because it contain part 40% in managerial decision making. To strength an organization value, it is very important for managers to define, understand and making strong communication with its customers. Furthermore, human and relational capital is intrinsically linked because it is your organization people who create and maintain strong relationship with your customers. According to Knight, Daniel J., (1999) the components of relational include:

a) **Customer capital** include the loyalty of customers are created by understanding their needs and wants.

b) **Supplier capital** includes the mutual trust, commitment and creativity of key suppliers.

c) **Alliance capital** includes the reliable and beneficial partners.

d) **Community capital** includes an organization capabilities and reputation in its surrounding community.

Social capital is knowledge embedded phenomena, refers as interrelationship among individuals and their network interactions (Nahapiet and Ghoshal, 1998). Therefore, social capital term is often used interchangeable to relational capital. This concept is used in numerous studies in different perspectives of organizations including the intra- and inters- relational studies (Nahapiet and Ghoshal, 1998; Yli-Renko *et al.*, 2001). These studies suggest social capital a key factor to generate the value creation efficiency of organization. These intra and inter relational activities enhance the quality of work among individuals and team members through richness of exchanged information (Subramaniam and Youndt, 2005).

Social capital is a resource based view which represents the potential relationship with customers, suppliers and industry. Productive social capital tends to improve the loyalty, customer satisfaction and product awareness (Edvinsson & Malone, 1997; Sullivan, 1998). Literature suggests that social capital and knowledge are positively connect where it directly affects the information exchange process of organization and providing more access to network resources (Nahapiet and Ghoshal, 1998).

Social capital is knowledge base phenomenon, “the sum of actual and potential resources embedded within, available through and derived from the network of relationships possessed by a social unit” (Nahapiet and Ghoshal, 1998). Kogut and Zander, (1993) suggest that social capital facilitates the knowledge process capability of organization through “knowledge acquisition, knowledge conversion, knowledge application and knowledge protection” which bring innovation and competitiveness. Constructive and effective relational capital affects the knowledge process capability which empowers the employee to share knowledge, hence eliminates distrust and dissatisfaction from knowledge creation process (von Krogh, 1998).

CHAPTER 3

THEORETICAL LITERATURE REVIEW

3.1 Knowledge Sharing Practices (Tacit and Explicit)

KS practices provide constructive lens to enhance organization's performance that explicitly involves flow of knowledge from one person to another or from one group to another within the organization (McAdam *et al.*, 2012). Wang and Wang, (2012) suggest that knowledge based capabilities of organization help to implant KS practices through creation, application and diffusion of knowledge. In addition KS practices are also imperative for preserving the valuable intangible resources which provide unique and innovative ways for problem solving through learning new practices and procedures to improve the competencies of organization for sustainable performance (Law and Ngai, 2008; Hsu, 2008). Numerous studies identified KS practices in multiple ways within the organization such as "formal and informal" (Zahra *et al.*, 2007; Taminiou *et al.*, 2009) "explicit and implicitly" (Wang and Wang, 2012; Quigley *et al.*, 2007) "solicit and voluntarily" (Teng and Song, 2011) "technology, business model and management practices" (McEvily *et al.*, 2000).

Based on previous discussion, knowledge may exist in implicit and explicit form within the organization. Explicit KS practices comprise of all set of practices that are formalized and commonly used within the organization. These practices can be easily identified, captured, altered and diffused alike organizational procedures, manuals and information system (Coakes, 2006).

Unlike explicit knowledge, tacit knowledge bit difficult to express in written, verbal or symbolic form where face to face interaction is an important source for tacit KS. Holste and Fields (2010) point out that key to success are employee's preference and willingness to share tacit knowledge what they learn and know from external and internal environment. Human experience and knowledge are paramount sources for tacit knowledge (Nonaka and Takeuchi, 1995). However, problems are inherited in tacit knowledge sharing due to employees' unwillingness to share knowledge, limited

awareness, and inability to express and apply the context specific tacit knowledge in other settings (Holste and Fields 2010).

McAdam *et al.*, (2012) advocates, KS practices both explicit and tacit provide foundation to improve organization's performance through flow of knowledge within and outside of organization which constitutes primary role to obtain competitive advantage (Reus *et al.*, 2009; Davenport and Prusak, 1998; Kalling, 2007; Yi, 2009). In addition, these practices are used to share and integrate dispersed knowledge through training and development programs, official documents and reports etc. that increases productivity, quality of products and services which leads to better operational performance (Gao *et al.*, 2009; Wang and Wang, 2012). Organizations also integrate and expand their stock of knowledge by investing in trainings courses, conferences, seminars, acquiring technologies and hiring professionals which assist in determining the future course of actions that enables employees' to improve their abilities through organizational engagement to obtain superior firms' performance (Wang *et al.*, 2014). However another study also advocates that explicit flow of knowledge has substantial and significant effect on operational performance of organization (van den Hooff and De Ridder 2004).

3.1.1 Explicit KS practices and Firms' Performance

Organizations integrate explicit KS practices to improve operational performance which constitutes the primary source for financial performance. Lawson *et al.*, (2009) asserted that explicit KS practices are the formal set of practices which help to improve products, services and business processes. However, studies also suggest that formal practices within the organization and between the organizations enable the management to identify crucial issues regarding the product quality improvement and innovation which paved the way towards better financial performance (Carr and Kaynak 2007; Wang and Wang 2012).

3.1.2 Tacit KS Practices and Firms' Performance

Tacit knowledge is an experiential knowledge which enables the employees' to share their experiences and brainstorm together for problem solving. It provides massive benefits to organization (Down, 2001; Akbar, 2003; Matthew and Sternberg, 2009) in terms of better quality of products and services, better business processes, reduction in transaction cost, provide first mover advantage in case of earlier launch of products which in turn to improve the organizational performance (Law, 2008).

Harold, (2008) argued that tacit knowledge is the source of value creation for firms. Du *et al.* (2007) pointed out that tacit KS is an important determinant for firms' performance. Likewise, Wang *et al.*, (2014) also asserted that tacit KS practices enhance firms' financial performance through cost reduction, better customer management and sales forces.

3.2 Critical Successful Factors of KM for KS-driven Performance

3.2.1 Knowledge Management Strategy and Performance

KM has attracted huge executive's interests as a corporate business strategy due to its capability to innovate, competitiveness, and ability to generate the profit and value for the organization. In beginning era of KM, it was bit difficult to objectively determine the value of KM for organization. However, research has explored the number of KM maturity models which have defined and clarified the role of KM for value creation such as Tan *et al.*'s (1998) Model, the SECI model (Nonaka and Takeuchi, 1995) and IC concepts (Edvinsson and Malone, 1997). Carrillo *et al.* (2003) claimed that KM has deep concern with organization performance. Moreover, Du Plessis, (2007) found the positive benefits of KM as the corporate business strategy who suggests that organization must do substantial for awareness of knowledge resources and its role for value creation.

Strategic management literature highlights that RBV has shifted to KBV of the organization where knowledge is considered crucial factor for leveraging the competitive advantage which enables the organization to innovate (Kogut and Zander,

1992). KM literature defines that developing KM strategies assist to identify the strategic assets which positively improve the business results and thus provide the competitive advantage and sustainable performance to firms (Sharp, 2006; du Plessis, 2007). This argument is not simple as it could be comprehended due to the intricacy of organizational factors and institutional forces which hinder the implementation of KM. Therefore, Greiner *et al.*, (2007) postulate that there is a need to align the KM corporate strategy through KM maturity where its' impact may lead to superior business outcomes. Further, studies also directed that KM strategy is imperative for successful KM plan (Yu, 1999; Robertson, 2005; Parlbay and Taylor, 2000).

However, KM strategies face same challenges as corporate strategies. For effective strategy planning, organizations must deploy the overall vision, mission and objectives in all units of business in order to link individual efforts with business accomplishments. Business processes must be in accordance to business strategy to make KM strategies more fruitful.

Two major classifications in KM strategies are codification and personalization. "Codification KM strategy focuses on capture, codification, store and dissemination of explicit knowledge and using them in forms compatible with organizational objectives" (Oluikpe 2012, p. 864). Personalization strategy refers to flow of knowledge through organizational networks and interactions (Greiner *et al.*, 2007; Kwong and Kwok, 2009). Nonaka and Takeuchi (1995) claimed model of SECI (internalization, externalization, combination and socialization) as the two major perspectives of KM strategy in knowledge management circles. Moreover, Nonaka and Takeuchi further classified the model of SECI into codification and personalization strategies where externalization and combination are linked with codified knowledge and internalization and socialization is concerned with personalization strategy of KM.

Boisot's (1998) model also highlights codification and personalization as a KM strategy where this model defines that knowledge assets can be located with three dimension from "uncodified" to "codified", from "concrete" to "abstract" and from "undiffused" to "diffused" (Haggie and Kingston, 2003). Haggie and Kingston

(2003) points out that Binney's (2001) KM model suggests that "knowledge is socially constructed" and "Knowledge is objectively articulated, captured and codified". This classification of Binney's model gives more clarity to "codification" and "personalization" as a corporate strategy where personalization is concerned with "social construction" and codification focuses that knowledge can be objectively articulated where it can be "captured", "stored" and "codified". Furthermore, Hansen *et al.*, (1999) argued that "codification" strategy facilitates for storage of codified knowledge in databases which can be easily retrieved by company for later use whereas "personalization" strategy refers that knowledge is closely concerned with persons who construct it and is shared through social interactions (direct person to person). Nevertheless, codification strategy improves task efficiency and later improves task quality (Hansen & Haas, 2001). The growing literature of KM exposed that implementation of KM as corporate business strategy facilitates to identify the strategic assets, augments the flow or sharing of knowledge that drive positive business results and leverages core competencies of organization (Oluikpe 2012).

Moreover, Oluikpe (2012) also suggests that it is important for organizations to have a comprehensive structure for implementation of KM as corporate strategy as well needs to align KM with business strategy down to the business operations that constitutes the success of KM as corporate strategy and adding more value to organization. In addition, afore-mentioned study claimed that knowledge has to be explorative rather than exploitative. As, explorative knowledge improves the performance of business processes by providing task oriented knowledge to operational and functional staff of an organization.

Knowledge management strategies can capture and identify strategic procedures in managing knowledge base activities in organizations. The purpose of such strategic initiatives is to encapsulate the appropriate equilibrium of internal and external knowledge that paramount firm's prerequisites or needs which turn to capitalize its resources most effectively (Bierly & Chakrabarti, 1996). However, there is still lack of consensus to adhere the concept of knowledge and knowledge management strategy in KM circles. Zack (2002) argued that term knowledge strategy is a competitive strategy which comprise of intellectual resources and capabilities of a

firm. The purpose of this strategy is to find out which knowledge is strategically most important for long term performance of business (Zack 2002). In contrast, knowledge management strategy encompasses strategic plans in order to define and formulate the processes, tools and infrastructures required to manage the knowledge gaps and its flow more effectively (Zack 2002).

Extant of research has identified and described the various knowledge management strategies. Jordan and Jones (1997) found that there are generally two types of strategies exist within the context of organization: tacit-oriented strategy and explicit-oriented strategy. The foremost purpose of these two strategies is to maintain balance between the strategies and led the way towards better firm performance through sharing of innovative ideas (Carr and Kaynak 2007; Wang and Wang 2012). Tacit-oriented strategy is informal (mutual interactions, face to face discussions and social networks) acquisition, storage, diffusion and sharing of internal knowledge. In contrast, explicit-oriented strategy refers to formal (systematic) acquisition, storage, diffusion and sharing of external knowledge (Keskin, 2005).

As knowledge management strategy has attracted much of executive's interests as a corporate business strategy due to its capability to innovate, competitiveness, and ability to generate the profit and value for the organization. This generic purpose of KM strategy is to identify knowledge gap (what knowledge organization must know and what knowledge knows about the organization).

Above discussion regarding to strategic management literature suggests that resource based view has shifted to knowledge based view of the organization where knowledge is considered essential factor leveraging the competitive advantage and enables organization's capacity to innovate (Kogut and Zander, 1992). Therefore, KBV literature suggests that organizations normally confronted with two types of strategies namely aggressive and conservative strategy. Firms that concentrate on conservative strategy tends to focus on internal knowledge while in aggressive strategy firms emphasis on external knowledge (regardless any organization's boundaries).

Zack (1999) concluded that firms concentrate on aggressive strategy would perform better as compare to those who have least concern with aggressive strategy.

Swan *et al.*, (2000) discussed further two important knowledge management strategies i.e. cognitive and community strategy. Cognitive strategy refers to flow of knowledge through information technology whereas community strategy emphasizes flow of knowledge through social networks or interactions which is more effective for organization.

Singh and Zollo (1998) observed the influence of tacit and codified knowledge strategies on performance and determined that tacit-oriented KM strategy more positively the influence the performance outcomes provided that task characteristics are highly homogeneous while codified KM strategy is more relevant when task characteristics are not homogenous. This indicates that organizations must align their KM strategies based on task characteristics.

Choi and Lee, (2002) asserted that organizations focus on system orientation and human orientation as KM strategies. This study tends to focus that system orientation strategy, formally capture and store the codified knowledge in knowledge management processes through information technology whereas, human orientation strategy attempts to capture or acquire the tacit knowledge via social interactions or face to face discussions.

Keskin (2005) stated that the choice for selection of appropriate knowledge management strategy is situational which relies on knowledge intensive behavior of organization. This Keskin's argument augmented the debate in knowledge management circles where Haggie & Kingston, (2003) found that it is very difficult for organization to select suitable KM strategy at first hand among multiple KM strategies due to ambiguity of situation. However, knowledge management literature suggests that implementation of KM strategies relies on three outlooks namely: focused view, balanced view and dynamic view. Focused view emphasizes only on one strategy; balanced view determined the moderate level between two strategies; and dynamic view recommends that firms align their strategies based on task

characteristics or knowledge (Choi & Lee, 2002). The first step is to develop driving strategy on the basis of knowledge and then implement the strategy in the right time (Bierly & Chakrabarti, 1996) and always see the big picture and keep update your tactical goals in order to accomplish strategic goals (Clare & Detore, 2000).

Above discussion shed light that literature has classified the KM strategies into “focuses”, “balanced” and “dynamic” (Table 2). However, present study is based on dynamic strategy uses the Choi and Lee (2002) typology and attempts to examine the mediating role of systems-oriented and human-oriented strategy for KS-driven performance.

3.2.2 Knowledge Management Capabilities

For linking the knowledge sharing practices with firm’s performance, the resource based view (RBV) provides a constructive lens to understand the underlying relationship (Mills and Smith 2010). RBV postulates that firms have bundle of knowledge resources facilitate to achieve competitive advantage and sustainable performance (Wernerfelt 1984). Sanchez *et al.*, (1996) and Gold *et al.*, (2001) suggest that term “resource” and “capabilities” are composite in nature and used as interchangeable. However, Grant (1991) advocates that resources are intangible phenomena provide input to commence the knowledge production process whereas capabilities are abilities to employ the knowledge potentially. Based on above discussions, it may be concluded that knowledge management enablers are used to integrate knowledge resources into capabilities (Maier and Remus, 2002). Various resources are used to structure the knowledge potential within a firm. These are organizational culture, structure and technological infrastructures are linked to a firm’s knowledge infrastructure capability; knowledge acquisition, knowledge conversion, knowledge application and knowledge protection which are linked to a firm’s knowledge process capability. These resources structure the knowledge management capability (KMC) which are linked with different organization’s performance of measure (Lee and Sukoco, 2007; Zack *et al.*, 2009).

Knowledge management capability is composite in nature (like knowledge enablers and processes) and most firms possess different levels and combinations of these resources (Mills and Smith, 2011). Composite natures of KM capabilities are unique and contribute to knowledge management capability which varies across firms to ascertain organizational performance and competitiveness (Zack *et al.*, 2009). Prior research also reveals that knowledge capabilities influence organizational performance (Zaim *et al.*, 2007) and tends to construct the bunch of knowledge capabilities for organizational performance (Gold *et al.*, 2001). This study is based on Gold *et al.* (2001) typology and divides the knowledge management capabilities in knowledge infrastructure capability or knowledge management enablers and knowledge process capability.

3.2.2.1 Knowledge Infrastructure Capability/Knowledge Management Enablers and Performance

Earlier discussion found RBV provides a constructive approach to link the knowledge sharing practices with firm's performance (Mills and Smith 2010). RBV postulates that firms have bundle of knowledge resources which facilitate to achieve competitive advantage and sustainable performance (Wernerfelt 1984). Sanchez *et al.*, (1996) and Gold *et al.*, (2001) suggest that term "resource" and "capabilities" are composite in nature and are used as interchangeable. However, Grant (1991) advocates that resources are intangible phenomena provide input to commence the knowledge production process whereas capabilities are abilities to employ the knowledge potentially.

Based on above discussion, it may be deduced that knowledge management is a product of resource based view (Guillen, 2000; Rivard *et al.*, 2006) where organizations transform the bundle of knowledge resources into capabilities. Prior research acknowledges and classify the knowledge management capabilities into knowledge infrastructure capability and knowledge process capabilities (Gold *et al.*, 2001; Mills and Smith 2010; Grant 1991). This indicates that effective knowledge infrastructure capability underpins knowledge sharing practices that turns to superior organizations performance (Gold *et al.*, 2001; Paisittanand *et al.*, 2007; Zack *et al.*,

2009). Knowledge infrastructure capabilities are composite in nature and different constituents are used to build it e.g. technology, organizational culture, organizational structure (gold *et al.*, 2001). So, current study attempts to adopt the gold *et al* (2001) framework where technology, organizational culture and structure are considered key determinants to exploit the knowledge sharing practices in organization.

3.2.2.1.1 Technology

Lee and Choi (2003) argued that information technology (IT) performs a critical role in removing limitations to communication and collaboration between different parts of the organization. The imperative role of IT is its ability to facilitate communication, collaboration and knowledge interactions that brings collaborative learning (Ngoc, 2005). Devenport and prusak (1998) states IT as a strategic contributor and an enabler in the field of KM. Marwick (2001) points out that there are number of IT mechanisms which can be used for knowledge creation and sharing these are communication technologies and decision-aiding technologies.

Communication technologies encompass e-mail, computer conferencing, video conferencing, electronic bulletin boards, etc. whereas decision-aiding technologies include executive information systems, decision-support systems and expert systems (Song *et al.*, 2001). Kendall, (1997) argues that communication technologies provide ways to permit, strengthen, and increase the interactions among organizational members and departments. Further, it facilitates the firms to save time and space, increase the information accessibility and stimulate the knowledge to be shared promptly and expediently (Marwick, 2001).

Decision-aid technologies provide the ways to enhance the capacity of an organization, enables the individuals or team members to develop models, formulate the alternatives and solutions for effective decision making (Kendall, 1997). It also enables firms to capture, store and retrieve extensive information quickly, and then associate and reconfigure the information precisely to generate new information (Song *et al.*, 2001). Hence, information technology helps individuals to develop

models, formulate the alternatives and solutions for complex tasks through sharing of knowledge which positively influence the firms' performance (Ngoc, 2005).

Further research finds that IT is one of the important constituent of knowledge infrastructure capability for creation, dissemination and integration of information and knowledge in organization. Nevertheless, suitable IT infrastructure is indispensable for proper application and sharing of knowledge but still most of the studies have failed to conclude any direct relationship while linking IT with organizational performance (Webb and Schlemmer, 2006; Seleim and Khalil, 2007). Similarly, studies found that IT itself do not illustrate any positive relationship with organizational performance (Powell and Dent-Micallef 1997; Clemons and Row, 1991). It may boost organization performance when it is linked with other human and business assets.

Based on above discussions it may be concluded that IT is not a direct substantial contributor to organizational performance but still its' importance cannot be ignored in order to capitalize other knowledge resources such as knowledge acquisition and application which may itself explains positive relationship with organizational performance (Seleim and Khalil 2007). Therefore, present study attempts to explore the relationship of IT infrastructure as source of KS-driven performance.

3.2.2.1.2 Organizational Culture

The different traits of culture have been shaped on basis of norms and attitudes which helps in distinguishing one firm from another (Forehand and Gilmer, 1964). Organizational culture refers to set of beliefs, values, norms, meanings and collective practices to rheostats people communications within an organization (Robbin, 2004). The success of organization is based upon these diverse values and norms that make organizational culture more effective (Schein, 1990). Positive set of values, beliefs, norms and behaviors constitute effective organizational culture (Kotter and Heskett ,1992). Culture awareness and knowledge shape through learning and belief of large groups. It is developed by individuals of the organization, their morals for

organization, employment rights vested to them, and by the nature of structure utilized by them to govern the organization. Titiev (1959) argued that communal learning process is the main source of culture that relied on systematic allocation of resources. Organization culture is determined by attitudes, norms and beliefs of people that lead to strong KS among employees of organization. Further, it is deeply interlinked with knowledge creation process (Kotter and Heskett, 1992).

Structural stability and combination of superior standard are two essential factors for effective culture management which may lead to better identification and sharing of knowledge (Schein, 1995). These multilayered sets of beliefs, propositions and values support in preserving different levels of culture, which is most significant factor for effective KM (Gold *et al.*, 2001).

Organization culture supports in improving knowledge creation process. It shapes and controls behavior of people which help them in KS in order to respond in complex situations (Mavondo & Farrell, 2004). Janz & Prasarnphanich, (2003) conclude that organizational culture provides support to encourage knowledge-related initiatives in forming suitable atmospheres for knowledge conversation and accessibility. Such strong cultural norms, values, openness, and sociability stimulate people's communications in term of KS (Ngoc, 2005). Detienne *et al.*, (2004) point out the collaboration, trust, and incentives are the three critical components of organizational culture. Slater (2004) points out that a collaborative environment encompasses the following traits: (a) "common goals, joint work, and interdependence; (b) equality in relationships; and (c) voluntary collaboration". Further, Alavi & Leidner, (2001) suggests that collaborative environment generates opportunities for knowledgeable people to share knowledge. Similarly, Detienne *et al.*, (2004) recommend that collaborative involvement empowers the organizational culture which enhances innovation to get necessary knowledge for people at ideal time. Benefit of KS generates opportunities for employees to learn from knowledge influencing the practices and decision making of the company.

The integral part of culture is trust building. It is a complex and multifaceted concept. Cook and Wall (1980) contend that "trust refers to belief, faith or trustworthy

intentions of people to augment mutual confidence and ability of others". Strong trustworthy intentions build the mutual interest and common goals among employees to produce commitment and loyalty where frequent face-to-face interactions help to establish knowledge base trust enabling people to get know one another and their behavior at various circumstances (Detienne *et al.*, 2004). Indeed, trust is one of the important components alongside with technology and organizational structure to develop good cultural norms that stimulates environment to be conducive to share knowledge within the organization (Davenport and Prusak1998). This indicates that trust encourage favorable environment to enable knowledge base activities in organization (Nelson & Coopriider, 1996). In addition to collaboration and trust, a reward or incentive system also determines the ways through which knowledge is captured and disseminated (Leonard, 1995). Incentive system refers to structural ability which promotes the knowledge base activities and motivates employees to share knowledge (Leonard, 1995). Knowledge creation process can be enhanced through tangible and intangible incentives to motivate employees to share knowledge. This suggests that incentive system is a critical factor which inspires the employees' behavior and intentions regarding the creation and sharing of knowledge (Hurley & Green, 2005).

Earlier discussions set, especially in context of KBV of organization, that organizational culture is the collection of shared values, beliefs and propositions of employees that may influence KS in organizations that turns to improve the firm's performance (Mills and Smith 2011). Hence, Sin and Tse (2000) found that cultural dimensions for example service quality, customer orientation, informality and innovation are important cultural values of organization that significantly influence the organizational performance along with market effectiveness (Sin and Tse, 2000; Aydin and Ceylan, 2009).

Although, organizational culture is knowledge-embedded and is considered an important source for KS due to its viability to develop and protect the knowledge, ability to encourage continuous learning in the organization, ability to encourage R&D, ability to augment competences among employees through KS (Marques and Simon 2006; Zack, Mckeen and Singh 2009; Mills and Smith 2010). Thus positive

cultural changes provide significant momentum to organizational performance (Richert 1999; Bhatt 2001; Sin and Tse 2000). Research has admitted that there are many inherent benefits of KS (Davenport and Prusak, 1998; Yi, 2009; Jonsson and Kalling), but still people are reluctant to share knowledge, identifying various reasons where organizational culture is one of the obstacles (McDermott and O'Dell, 2001; Davenport and Prusak, 1998; Al-Alawi *et al.*, 2007). Similarly, Schein (2004) also postulates that organizational culture is impediment for KS, but employees behavioral and attitudinal varies with respect to organizational context. Therefore, in view of this discussion, this study attempts to consider organizational culture as an important mediator in KS driven performance.

3.2.2.1.3 Organizational Structure

It refers to as formal structure, relationships among people and allocation of resources and activities (Mckenna, 1999). Extant of literature examines organizational structure from a conventional perspective, where centralization and formalization are considered as two important operational dimensions (Tata & Prasad, 2004). Centralization refers to certain hierarchical level where management has more authority as well autonomy to make a decision within the organization.

Schminke, *et al.*, (2000) define formalization as written documentation, rules and procedures, guidelines and policies that influence the flow of knowledge. Generally, centralization inhibits interdepartmental communication, sharing of ideas, and knowledge application within organization (Woodman *et al.*, 1993; Kohli & Jaworski, 1990). On the other hand, decentralization is an important to assist the interdepartmental communication through frequent sharing of ideas and application of knowledge that empowers the employees to share relevant information with each other (Hurley & Green, 2005). Further, Adler (1999) emphasizes that it may difficult to avoid inconsistency, disorder and repetition of efforts due to decentralization.

However, Lin & Germain, (2003) discussed the two contrasting views while in constructing the relationship between formalization with respect to knowledge sharing and its application. First, formalized structure may be less flexible, inhibiting the

acquisition and consumption of knowledge whereas in case of absence of formal structure facilitates the organization members to communicate with each other in order to create and share the knowledge (Jarvenpaa & Staples, 2000). Second, formalized structure helps to standardize the pooling of information and dissemination in order to identify and storage of strategic issues and knowledge resources (Segars, Grover, & Teng, 1998).

3.2.2.2 Knowledge Process Capability and Performance

Knowledge process capabilities refers to the abilities of a firm using knowledge assets in a series of coordinated knowledge processes for the purpose of creating valuable knowledge (Gold *et al*, 2001; Alavi and Leidner, 2001). Research also posits that ability to generate and diffuse the knowledge throughout the organization recognized as a major strategic capability for gaining sustainable competitive advantage (Roth, 2003; Beveren, 2002; Zaim *et al.*, 2007). These are the special abilities of an organization for creating and leveraging the knowledge which are being identified as a central element for organizational survival (Nahapiet and Ghoshal, 1998).

Knowledge process capabilities improve the organization processes through innovation, collaborative decision making and collective learning. As a result, improved processes enhance the organization's outcomes that include better decisions for problem solving, improve products and services and better external relationships (Mills and Smith, 2011) which in turns to lead to better organizational performance. Knowledge process capability is the ability to create new knowledge through the process of converting tacit knowledge into explicit knowledge and eventually transforming it into organizational knowledge (Nonaka and Takeuchi, 1995). Many studies identified and used the variety of KM processes including knowledge generate, codify, coordinate and transfer (Davenport and Prusak, 1998; Kogut and Zander, Mills and Smith, 2011), acquire, create, accumulate and exploit (Drucker 1985), accumulate, store, share and use (Nonaka and Takeuchi, 1995), create, represent, apply and deploy (Prusak, 1996), discover, capture, share and apply (Becerra-Fernandez, Gonzalez and Sabherwal, 2004), acquire, collaborate, integrate, and experiment (Leonard-Barton, 1995) etc. By examining all these Gold *et al.*,

(2001) identified four broad dimensions that include “acquiring knowledge and convert it into a valuable form, applying it in an organization and protect it”.

Keeping in view, literature acknowledges and identifies many key facets of the knowledge process capability and categorized into creation, transfer, and usage of knowledge (Skyme & Admidon, 1998; Spender, 1996). DeLong, (1997) classifies the knowledge process capability into capture, transfer, and use of knowledge. Apart from that other research categorizes knowledge process capability into identification, acquisition, development, sharing, utilization, and retention of knowledge (Probst *et al.*, 2000). Shin *et al.*, (2001) integrates all the terminologies used by several authors and groups the knowledge process capability into knowledge creation, storage, distribution, and application.

Gold *et al.* (2001) contend that knowledge process capabilities are required for leveraging the infrastructure capability. They have identified four key dimensions of knowledge process capabilities “acquiring knowledge, converting it into useful form, applying or using it, and protecting it” (Gold *et al.*, 2001, p. 190). Currently, there is a widely accepted consensus among researchers that there are four comprehensive dimensions of knowledge process capability including the knowledge acquisition, protection, conversion and application (Gold *et al.*, 2001; Park, 2006) and therefore, the present study uses the Gold *et al.*, (2001) topology to explore the nature of relationship of knowledge process capability in determining the KS-driven performance.

3.2.2.2.1 Knowledge Acquisition Process

Knowledge acquisition refers to process of developing new knowledge and replacing the content of existing knowledge with new tacit and explicit knowledge (Pentland, 1995; Nonaka, 1994). It also refers to firm's capability to identify, acquire, and accumulate the knowledge from both external and internal environment. Many alternative terms have been used like capture, creation, construction, identification and generation to define the knowledge acquisition process. Prior discussion guides that term acquisition refers to a firm's ability to create, acquire and accumulate knowledge (internally and externally) that is useful for its business operations. Knowledge creation and acquisition both are considered as important source of developing new knowledge for a firm.

Knowledge is created from internal knowledge workers (employee's) through research, observations, innovation projects, experimental and empirical learning. Besides, it can be acquired through external sources including customers, suppliers, competitors, market channels etc. (Turner and Makhija, 2006). Knowledge acquisition can be viewed as the firm's potential capacity to use its knowledge to create competitive advantage. Sony (2008) finds that knowledge creation process significantly relate to organizational improvement. Knowledge creation and acquisition enhances the problem solving capabilities of the firm, which, in turns to facilitate the development of the new knowledge and new knowledge facilitates the innovation which in turns to influence firm's financial performance.

Nonaka and Takeuchi's (1995) SECI model suggest that knowledge is created using four processes (i.e. socialization, externalization, combination, and internalization). Further, Nonaka and Takeuchi (1995) find that social interaction help to convert tacit knowledge into explicit knowledge. Studies also suggest the systematic transformation which summarizes the knowledge conversion process as follows: (a) transformation of tacit knowledge through socialization (b) conversion of tacit knowledge into explicit knowledge through externalization (c) creation of new explicit knowledge via combination of existing explicit knowledge (d) acquisition of tacit knowledge through internalization of explicit knowledge. Alavi & Leidner,

(2001) highlights the recognizing feature of “ba” is very important to determine its relationship with modes of knowledge to enhance knowledge creation capability. According to Nonaka & Konno (1998) information technology in cyber “ba” used to enhance the proficiency of the combination mode of knowledge creation. Organization should gain and exchange knowledge with external stakeholders for continuously up-gradation of knowledge through bench-marking, best practices, and feedback of projects experience to improve subsequent projects (Park 2006). These practices identify deficiencies to capture the knowledge for internal use (Gold *et al.*, 2001).

Summing up, knowledge acquisition refers to identify and capture the strategic knowledge both from internal and external sources and replacing the new knowledge with existing knowledge which is important for survival of organization (Gold *et al.*, 2001; Zahra and George, 2002). Knowledge acquisition process involves certain activities such as creation, improvement, codification, and storage of knowledge. In this phase, research and development, experimentation and empirical learning can be used to create new knowledge by internal knowledge workers. Turner and Makhija, (2006) argue that external channels such as market networks, customers, competitors and suppliers are also important source to acquire new knowledge. Grover and Davenport, (2001) state that when new knowledge is created and acquired then in next step it require to convert the new knowledge into accessible and acceptable form that can be kept in organization’s knowledge repository.

Knowledge acquisition also involves several other aspects (e.g. formation, sharing and dissemination of knowledge) and it is solely depending upon firm’s absorption capacity (Zahra and George, 2002; Gold *et al.*, 2001). Thus absorption capacity is the ability of firm to use knowledge more effectively to obtain competitive advantage. Research suggests that knowledge acquisition and its productive use has positive association with perceived organizational performance (Seleim and Khalil, 2007). Furthermore, Lyles and Salk (1996) also asserted that effective use of acquired knowledge is substantial related with organizational performance.

3.2.2.2.2 Knowledge Conversion Process

The knowledge conversion process is transitory in nature which relies on rapid transformation of data into information and information into knowledge in order to get optimal benefits from this process (Bhatt, 2001). Organizations obtain knowledge from both internal and external sources for effective flow of knowledge and application of it within the organization (Lee and Suh, 2003). Above discussion postulates that knowledge created from internal sources and acquired from external sources must be converted into a useful form to capitalize into business operations. In simple words, acquired knowledge is converted into accessible and applicable format. According to the Lee and Suh (2003), knowledge is intangible, difficult to integrate and share but needs to be converted for use in business processes.

When an organization realizes a dearth of particular knowledge, then a “knowledge gap” exists within the organization and creates a need to produce or to transfer the knowledge (Gilbert *et al.*, 1996). Marshall (1997) states that knowledge conversion is the dissemination of context specific knowledge, experience and expertise in organization to functional areas like production processes. Davenport & Prusak (1998) define that knowledge conversion is a two way process that contains both the diffusion of information to a receiver, and absorption of knowledge from that person or group. These knowledge conversion processes referred as internal knowledge conversion (transfer of knowledge within an organization) and external knowledge conversion (exchange of knowledge between the organizations). Park (2006) highlights some important characteristics that execute knowledge conversion process: (a) transmission of competitive intelligence into operational plans, (b) scanning and evaluating knowledge, (c) transmitting organizational knowledge to persons, (d) fascinating individual and partner knowledge into the organization, (e) incorporating different sources of knowledge, and (g) substituting obsolete knowledge.

Knowledge conversion also refers to the supply or diffusion of knowledge between the point of creation to point of use (Shin *et al.*, 2001; Walter *et al.*, 2007). Alavi and Leidner, (2001) suggest that it can be found at different firm’s levels among

individual, teams, departments and divisions through both formal and informal channels. Gupta and Govindarajan (2000) indicated that knowledge conversion process may influenced by perceive value of knowledge provider, motivational intensions of the knowledge provider, presence and productiveness of the communication channels, motivational intensions of knowledge receiver, and the absorptive capacity of knowledge receiving unit. Furthermore, effective communication channels between organization and environment facilitate knowledge transmission.

Further, KM literature also reveals that information and communication technology (ICT) mechanisms provide an important platform in conversion or transmission of knowledge. However, Bresnen *et al.*, (2003) shed light that social affiliations and positive cultural changes also promote or impede knowledge conversion process which created the debate between academicians and policy makers that whether effective knowledge transmission relies on social and cultural aspects or on ICT mechanisms and other related procedures. In contrary to above earlier discussions, studies also find that knowledge conversion is bit difficult as it is embedded in individuals and contexts specific (Hoetker and Agarwal, 2007). Finally, it concludes that knowledge acquisition is a process of capturing new knowledge in order to convert individual's knowledge into organization knowledge that turns to improve organizational performance (Lee and Suh, 2003; Bhatt, 2001). Thus, knowledge conversion is crucial to improve the abilities in terms of KS driven performance.

3.2.2.2.3 Knowledge Application Process

Applying knowledge refers to make knowledge more productive for value creating (Bhatt, 2001). The need to apply knowledge to various products and services come through different ways such as role of research and development for new products development, re-organizing the operations based on structure and responsibilities, transmission of product knowledge to customers through multiple channels and as well knowledge addition through strategic alliances and agreements (Sharabati *et al.*, 2010). However, "organizations apply knowledge to their products and services

through renovating available knowledge, motivating and training the employees' to think creatively, and utilizing people's understanding regarding company's processes, related to products and services" (Mills and Smith, 2010, pp.160).

In knowledge application process, "knowledge is transferred or distributed from the point of generation to the point of use, making knowledge more effective and relevant for the firm in creating value" (Bhatt, 2001, pp. 72-73). Droge *et al* (2003) asserts that rapid knowledge creation and application at lower cost than competitors provide sustainable competitive advantage. According to Nielsen (2006), knowledge application processes are related to knowledge leverage and exploitation. Further knowledge based theory discusses that the major competitiveness of the firm depends upon the ability to apply knowledge rather than ability to create knowledge (Grant 1996a).

Therefore new knowledge creation and its rapid application at lower cost will be successful for creating core competency in long run (Droge *et al.* 2003). Probst *et al.*, (2000) suggest that knowledge application is essential to enhance the productivity of organization. Similarly, it is admitted by several other authors that effective knowledge's application in organization enhance the efficiency and productivity of organization through lowering costs once it is created (Davenport and Klahr, 1998; Gold *et al.*, 2001). Grant (1996) provides some directions to integrate and then later its application of knowledge. First, he point out that formal sets of rules, procedures, and standards help to integrate the explicit knowledge and then its application. Second, organizational practices and patterns concerning to task performance and coordination, conventions and process specification related to flow of knowledge for application. Park, (2006) argues that knowledge application is also important to remove past mistakes for solving complex problems, to regulate the strategic ways in order to improve the efficiency of business processes. Hence knowledge application is basically the actual use of knowledge for leveraging competitiveness through developing new products, building strategic alliances and organization learning with ultimate purpose to improve operational excellency that shape better firm's performance (Gold *et al.*, 2001; Mills and Smith, 2010). Hence, prior discussion indicates that the performances of the firms are dependent on the ability to exploit its

integrated knowledge resources in order to develop and deliver products and services to customers through utilizing its organizational capabilities (Nielsen, 2006).

3.2.2.2.4 Knowledge Protection

Knowledge protection is essential for effective control and sharing of knowledge within and outside of the organization. It includes the protection of knowledge from illegitimate or inappropriate use or theft (Gold *et al.*, 2001). Knowledge protection includes the use of intellectual copy rights (IPRs) with IT systems so that firm's knowledge will be secured by file and user name and password and further file-sharing protocols that ascribe rights to authorize users (Lee and Yang, 2000). Further, firms also instruct their employees about the types of knowledge that they should not share with their peers in other organizations (Appleyard 1996).

Knowledge protection and control are typical IPRs of an organization for effective functioning of knowledge within the organization. Knowledge is used to create value and competitive advantage for organization (Droge *et al.* 2003), therefore, storage, protection and effective control of knowledge within the organization create value in a long run (Droge *et al.* 2003; Lee and Sukoco, 2007). However, knowledge protection laws are often challenging due to its limited treatment. Nevertheless, besides limitations knowledge protection practices should not be lethargic and abandoned (Gold *et al.*, 2001). Knowledge safety from misuse is crucial to get competitive advantage (Liebeskind, 1996). Alavi (2000) emphasizes that creation of new knowledge is not sufficient unless organizations' do not develop the mechanisms to store and protect the acquired knowledge and to retrieve when it is needed. Tan *et al.*, (1998) "assert that organizations fulfill the purpose of knowledge protection through residing knowledge in organizations' memory in various forms that may include written documentations, structured information stored in electronic databases, codified human knowledge stored in expert systems, documented organizational procedures and processes, and tacit knowledge acquired by individuals and networks of individuals".

Walsh & Ungson, (1991) argues that organizational memory encompasses individual's memory such as individuals' observations, their experiences, and actions, as well shared knowledge and interactions, organizational culture, production processes and work procedures, formal organizational procedures, physical work setting and both internal and external informational archives to the organization.

Probst *et al.*, (2000) advocate that organizations' desire to manage knowledge for the purpose of its accessibility in the future must be based on three basic of KM processes. Firstly, organizations' memory to protect the knowledge for retrieval purposes, secondly, storage of experiences in an appropriate form and last the organization must select from the many organizational events, persons and processes those that are worth retaining.

Further, Gold *et al.*, (2001) propose that organizations must develop security systems that enable to protect the knowledge in order to access the important information. This suggest that protection of knowledge is very important for the organization to save it from inappropriate use as well restricting knowledge through security checks reduce the leakage of knowledge within and outside of organization.

Setting in this discourse, Droge *et al.*, (2003) conclude that knowledge is used to create value as well competitive advantage for organization, where storage and protection of knowledge provide potential benefits for organization in a long run. Furthermore, based on available literature it may concluded that knowledge infrastructure and knowledge process capability are one of the important critical success factor of KM, that not only support knowledge sharing process, but also help to improve the operational and financial performance of organization (Liu *et al.*, 2005; Zaim *et al.* 2007; Zack *et al.*, 2009; Gold *et al.* 2001). In addition Gosh and Scott (2007) also claim that knowledge infrastructure capability such as "organizational culture, structure and technology" need to correspond with knowledge process capability "actual transmission of knowledge and its application" to obtain substantial improvement and effectiveness in organizational performance.

3.2.3 Intellectual Capital (IC) and Performance

Intellectual capital (IC) includes knowledge base capabilities which are imperative for organizational survival and competitiveness (Teece and Teece, 2000; Stewart and Ruckdeschel, 1998). Literature defines IC as intangible resource and capability as a source of competitiveness that lead to superior performance outcomes through value creation (Bontis, 1998; Subramaniam and Youndt, 2005; Roos and Roos, 1997). Huang and Wu (2010) state that competitive advantage is based on firm's ability to share and apply innovative knowledge. Initially, Stewart (1994) was pioneer who had put forwarded the concept of IC and used its' implications to separate the book and market value of organization. Extant of literature defines IC in different ways including; Edvinsson and Malone, (1997), "knowledge assets that can be converted into value and unable to capture fully in balance sheet", Sharabati *et al.*, (2010) and Stewart and Ruckdeschel, (1998), "intellectual material like information, intellectual property rights (IPRs), innovation and creation, systems and programs, research and development (R&D), experience and expertise that provides competitive advantage".

The above discussion portrays that IC has been addressed in different ways in literature but still difficult to identify and capture. Now, there is a convergence of opinion which agreed the scholars, academicians, and policy makers to recognize IC as an intangible resource or asset which is use to generate value for the organization rides in individuals minds in term of human capital, stored in organizations' databases in terms of structural capital (Sullivan, 1999, Youndt *et al.*, 2004; Zharinova, 2011). Drawing upon plethora of literature, the present study comes at a conclusion that IC has three major components namely human, structural and relational capital (Sharabati *et al.*, 2010; Johannessen *et al.* 2005; Herremans *et al.*, 2011; Rehman *et al.*, 2011; Namvar *et al.*, 2010). Further, this evidence of consensus discusses the IC components; human capital as embedded human skill, expertise and experience, stock of knowledge to obtain certain targets like organization sustainable performance through competitiveness (Campbell *et al.*, 2012; Rehman *et al.*, 2011; Nick and Alexander, 2007). Nevertheless, it is also regarded as intangible asset of the company

relating to people's knowledge, skill, experience, ability to generate value (Edvinsson and Malone 1997; Roos and Roos 1997).

Structural Capital (SC) is another important constituent of IC. It refers to supportive infrastructure processes and databases which enable the human capital to function properly. It is a valuable tactical asset, composition of non-human assets (Edvinsson and Malone 1997) and employees do not take home while leaving the organization. Therefore, it recognizes as organizational structure, databases, information systems, patents, routines, procedures, trade mark, copy rights and technology, moving knowledge and organizational culture essential for organization's performance and reputation (Karagiannis *et al.*, 2008; Cabrita and Vaz, 2006; Zangouezhad and Moshabaki, 2009). In addition, Sharabati, *et al.*, (2010) decompose SC as systems and programs, R&D and IPRs are the non-human warehouses of knowledge. These certain elements of SC can be protected in form of patents and copyrights (Roos *et al.*, 1997).

Rational capital (RC) is the embedded strategic alliances with stakeholders (Roos *et al.*, 1997) where customers are the key focus to encourage the intimacy with them in order to improve the firm's performance (Prahalad and Ramaswamy, 2000). So, relational capital is the life blood which helps to integrate and share the knowledge base learning capabilities (De Clercq and Sapienza, 2006; Bontis, 1998; Kale *et al.*, 2000; Dewhurst and Navarro, 2004; Kong and Farrell, 2010).

Aforementioned debate concludes that IC is a knowledge base resource representing intellectual skills, abilities, infrastructures and relations which provide the sustainable performance to organization (Sharabati *et al.*, 2010). Previous research decomposes IC into three major constituents; human, structural and relational capital which are powerful tools to boost the financial and non-financial performance (Rehman *et al.*, 2011; Shih *et al.*, 2007; Hsu and Sabherwal, 2011; Sharabati *et al.*, 2010; Youndt *et al.*, 2004).

3.2.3.1 Human Capital and Firm Performance

Today, in global dynamic environment, human capital (HC) recognizes as valuable strategic resource for sustainable performance (Bontis *et al.*, 2007). Indeed, organizations knowledgeable individual with excellent intellectual capabilities for problem solving and effective decision-making (Wang *et al.*, 2014). Organization products and services are delivered by employees, so improve efficiency and operational excellence has a deep link with human capital performance (Cabello-Medina *et al.*, 2011). It performs a fundamental role to get competitiveness through making strategic decisions (Teece and Teece, 2000). Firms investing more on HC tend to have healthier HC efficiency which leads to better operational performance (Seleim *et al.*, 2007; Rehman *et al.*, 2011; Wang *et al.*, 2014).

Extant of literature asserts that HC is a valuable resource for organizations' performance where its efficiency is based on its magnitude of investment resulting high financial performance (Le Blanc *et al.*, 1998). Similarly, findings are also supported by other research (e.g. Rehman *et al.*, 2011; Wang *et al.*, 2014; Ling and Jaw 2006) who postulate that HC efficiency lead to better financial performance.

3.2.3.2 Structural Capital and Firm performance

Structural Capital (SC) is another important constituent IC. It is also refer to supportive infrastructure, databases and processes of organization which enable the HC to function properly (Wang *et al.*, 2014). It is a valuable tactical asset which is a composition of non-human assets (Bontis, 1998; Edvinsson and Malone 1997; Youndt *et al.*, 2004) and employees do not take off while leaving the organization at day end. Therefore, it is recognized as all procedures, organizational structures, database, systems, patents, trade mark, copy rights and technology employed to achieve better organization's performance and reputation (Zangouinezhad and Moshabaki, 2009; Bontis, 1998; Youndt *et al.*, 2004; Karagiannis *et al.*, 2008;). Further, SC supports to t improve the overall business strategies to achieve better performance in terms of higher quality and lower cost (Aramburu and Saenz, 2011). Thus, SC has positive and significant relationship with financial performance in terms of return on asset, return

on equity and revenue growths and earning per share (Mohiuddin *et al.*, 2006; Rehman *et al.*, 2011; Phusavat *et al.* 2011).

Earlier discussion suggests that structural capital is fundamental to improve operational performance of organization. Conversely, if an organization has poor SC along with barrier to deploy necessary resources then it may find the difficulty to achieve performance outcomes (Wang *et al.*, 2014). However, organizations that have strong SC supported by fostering innovative systems and procedures, friendly culture might have better financial outcomes (De Brentani and Kleinschmidt, 2004).

3.2.3.3 Relational Capital and Firm Performance

Strategic alliances (relational capital) with internal and external stakeholders help to build long term relations (Sharabati *et al.*, 2010; Hsu and Wang, 2012). These alliance aids to explore cognitive accumulation, define better ways for doing things (Wang *et al.*, 2014), improve the business operations from learning others (Cousins *et al.*, 2006) and eventually enhance the operational performance in terms of higher quality and lower cost, improved asset management and productivity (Wang *et al.*, 2014). As relational capital improves the product quality, reduce production and transaction cost and defines innovative ways for doing things (Wang *et al.*, 2014; Zhang and Fung, 2006). Zhang *et al.* (2006) confirmed that flow of relational capital has significant and substantial effect on financial performance.

3.2.3.4 Knowledge Sharing and Intellectual Capital

The knowledge based view (KBV) advocates that managing knowledge base resources are more likely to contribute in obtaining sustainable superior performance and competency for organizations than tangible resources. It is a key aspect that constitutes knowledge base capabilities within the organization. Knowledge collaboration is much important within organization among individuals and groups to ensure full use of it in order to espouse extensive IC practices (Hsu and Sabherwal, 2012). Hsu (2008) and Karagiannis *et al.* (2008) pointed out that KS practices enhance the organizational performance through development of human and structural capital. According to Intellectual capital (IC) theory that states human, structural,

relational capital and other knowledge assets are major constituents for determining performance of IC which can be used for sustainable competitive advantage.

However, if KS practices restrict up to certain level and remain isolated, it would be more difficult to induce extensive IC practices within organization. As KS practices involve the flow or diffusion of specific knowledge from one individual to another or group (Karagiannis *et al.*, 2008), consider as crucial factor for enterprise KM process (Small, 2006). However, organization specific knowledge augments the knowledge process capability which is unique for competitors (Grant, 1996). As explicit KS practices boost the skills of receiver and sender through discussion and feedback, nevertheless it also widens the depth of understanding of knowledge both for receiver and sender (Ipe, 2003). Thus such practices support the employee's learning effectiveness and employee's knowledge structure that leads to better individual's performance (Chao *et al.*, 2011;Huysman and de Wit, 2004) as well human capital performance (Hsu, 2008; Spender and Marr, 2006).

3.2.3.4.1 Explicit KS Practices and Human Capital

As explicit KS practices share job related knowledge both technical and non-technical for problem solving (Karagiannis *et al.*, 2008). However, these practices facilitate the best utilization of management structure in a collaborative and dynamic environment for better decision making (Yoon *et al.*, 2011). Organization's performance and productivity can be achieved with formalization of individual and group knowledge in the form of process technology, patents, copyrights, procedures and policies (Wang *et al.*, 2014). Furthermore, de Pablos, (2004) states that both individual and group knowledge is implanted through institutionalization of explicit KS practices during the learning process.

3.2.3.4.2 Explicit KS Practices and Structural Capital

Carmeli and Azeroual (2009) advocated that explicit KS assist people to grow their structural ties through personal interactions which demonstrate interpersonal aspects characterized by trust and trustworthiness. In addition, people in organization has to perform diverse assignments, the sharing of explicit knowledge, information and resources enable them to improve their job performance that gauge the interpersonal relations (Hu, 2009). As KS practices involve the flow or diffusion of specific knowledge from one individual to another or group (Karagiannis *et al.*, 2008). Such Knowledge collaboration is much important within organization among individuals and groups to ensure full use of it in order to espouse extensive IC practices (Hsu and Sabherwal, 2012) as well structure the high quality relational capital through flow of explicit KM practices(Wang *et al.*, 2014).

3.2.3.4.3 Explicit KS Practices and Relational Capital

Peet (2012) states tacit knowledge is bit difficult to classified, codified, recovered and shared with others. However, it can be contextualize through interaction of individuals and groups that clues to knowledge creation (Nonaka and Takeuchi, 1995). Bloodgood and Chilton (2012) say that actually exchange of tacit knowledge gauges the intellectual innovation of employee's thorough applied skills and experiences. In addition, such tacit knowledge practices improve the idiosyncratic and applied experiences, skills, perceptions, and common sense of employee which collectively work for the better performance of human capital, (Wang *et al.*, 2014). Furthermore, this also confirms that tacit KM practices have relatively substantial effect on operational performance of firms rather than financial performance.

3.2.3.4.4 Tacit KS Practices and Human Capital

As tacit knowledge can be found in a variety of ways such as emotions, intuitions and perceptions, feelings and insights (Bloodgood and Chilton 2012; Joia and Lemos, 2010). However, in day to day activities; some tacit practices are formal like share of training and conference outcomes while some are informal like social and personal interactions of employees about job related task. Such practices

influence employees' behavior and way of thinking to improve structural capital through adding more in existing infrastructure, procedures, policies and learning environment (Wang *et al.*, 2014).

3.2.3.4.5 Tacit KS Practices and Structural Capital

As tacit KS practices are subjective opinions, context-specific intuitions, or feelings which are the main source of competitive advantage (Wang *et al.*, 2014). Such interactive collaboration and personal communication help to build the trust and relations within the organization (Yang and Lai, 2012) through sharing of experiences and expressing the concerns (Kong and Farrell, 2010; Wu *et al.*, 2008).

3.3 Inter-relational among critical success factors of KM through KM models

3.3.1 Keskin's Model

Keskin (2005) attempted an empirical investigation to examine the relationship between knowledge management strategy and firm performance and suggested a comprehensive theoretical model which classifies the knowledge management strategies into two categories namely explicit-oriented knowledge management strategy and tacit-oriented knowledge management strategy. Keskin's Model, evaluates the firm performance using success rate of firm, market share of firm, growth, profitability, innovation and size of firm as compared to key existing competitors. The study primarily tested the three hypotheses (a) explicit-oriented KM strategies positively affect firm performance (b) tacit-oriented KM strategies positively affect firm performance and (c) the higher the environmental hostility more positive influences the explicit-and tacit- oriented KM strategies, and a company's performance.

The survey instrument (questionnaire) was used to empirically investigate the proposed hypotheses in small-medium enterprises (SMEs) in Turkey and data was collected from 128 SMEs out of 600 selected samples. Middle managers were the respondents and response rate was 21%. This study employed regression analysis and the principal component analysis (PCA) with varimax rotation method. The results of

study revealed that KM strategies both tacit and explicit positively influence the performance of SMEs. However, study also exhibited that explicit KM strategies have relatively more contribution for measuring the SMEs performance as compare to tacit KM strategies. Further, the results of study illustrated that KM strategies (Explicit and tacit) more positively influenced the SMEs performance at the presence of environment's turbulence and market competition. The findings of this study also indicate that KM strategies are imperative for sustainable firms' performance. Thus, formulation of effective KM strategies strengthens the firms' performance.

3.3.2 The Gold, Malhotra, and Segars Model

Gold, *et al.* (2001) was among other researchers in knowledge management circles who postulated a knowledge management effectiveness model which is commonly referred as "composite model". According to Gold, *et al.* this model integrated the two perspectives (i.e. capability perspective theory and contingency perspective theory) and further classified model into two constructs (i.e. knowledge infrastructure capability which is commonly referred as knowledge management enablers and knowledge process capability). Gold, *et al.* argued that knowledge infrastructure capability further have three constructs namely technology, organizational structure and culture that represents social capital and it's relationships with knowledge providers and users. Whereas, knowledge process capabilities represent the integration of knowledge processes in organization via knowledge acquisition, knowledge conversion, knowledge application, and knowledge protection.

Earlier literature considers Gold, *et al.* composite model as a precondition for effective utilization of knowledge resources in organization (Davenport *et al.*, 1998; Alavi and Leidner, 2001). Thus researchers suggested that composite framework benefited the organization's outcomes in terms of organizational performance, KM success and strategy implementation (Chan and Chao, 2008; Jennex and Olfman, 2005; Laframboise *et al.*, 2007; Paisittanand *et al.*, 2007).

Gold, *et al.* (2001) conducted the survey to collect the data from 1000 senior executives of 322 firms out of 86% respondents were holding the key positions of chief executive officers, chief operating officers, chief financial officers and presidents of companies. The selected sample represented 89% of firms with more than \$100 million sale volume and 58% out of 322 firms were from finance and manufacturing sector. The results of study revealed that knowledge infrastructure and process capability have a high degree of relationship with firm performance and allows the researchers to focus more on the effects within the domain of study limitations. However, this study is based on unique data set and lacks to provide in depth investigation concerning key capabilities of individual firms. Therefore, composite model opens the new horizons for future researchers where it is imperative to explore the new strategies, capabilities, enablers and programs for sustainable firm performance which will help the organization to further formalize explicit knowledge and ease to convert the tacit knowledge into explicit knowledge as well need to investigate the inter relationship of knowledge infrastructure and process capability.

Therefore, composite model provide insights for future researchers and need to explore the new strategies, capabilities, enablers and programs for sustainable firm performance which will help the organization to further formalize explicit knowledge and ease to convert the tacit knowledge into explicit knowledge as well need to investigate the inter relationship of knowledge infrastructure and process capability.

3.3.3 Laupase's Individual-to-Organizational Knowledge Conversion Research Model

Laupase (2003) attempted to explore the knowledge conversion process based on Nonaka and Takeuchi's model of SECI. The purpose of Laupase's study was to illustrate that how knowledge infrastructure capabilities (i.e. organizational structure, culture and technologies) support the knowledge conversion process (tacit knowledge to explicit knowledge) in selected sample of three management consulting firms of Australia. In this discourse, semi structured interviews were conducted to address the research questions that how organization's knowledge conversion process take place in two internationally and one nationally recognized management consulting firms.

The interview data was collected from two senior executives who were employed in internationally recognized consulting firms and one middle manager who was employed in nationally recognized consulting firms.

The interview guide was prepared to probe out in depth investigation and each interview was contained to 45 to 60 minutes which was properly taped and then transcribed. During the transcription process, the study highlighted the key themes as per proposition of study which were as followed:

1. Do the formal meeting procedures facilitate the organization's individuals to convert tacit knowledge into explicit knowledge via socialization?
2. Do the tacit knowledge procedures such as metaphors (symbols, images and allegories), narratives (descriptions) and analogies are imperative to assist individuals to integrate the tacit knowledge?
3. Does the multifaceted organizational structure enhance the knowledge transformation processes?
4. How does the culture such reward systems, trust and collaboration encourage the knowledge conversion process?
5. Why does information and communication technology (ICT) not enable knowledge conversion processes?

The in depth interview investigation probes out three major factors (i.e. organization structure, culture and information technology) which support the knowledge conversion process in organizations. Furthermore, the survey results indicate that in all the three firms' technology is not the prevalence practice in management consulting firms when focusing knowledge conversion process in organizations. The most important issue is to constitute an effective organizational structure and culture to support the conversion processes.

Furthermore, the findings of study explored that formal meeting procedures fail to establish any link with tacit knowledge and it's sharing among members. Similarly, firms are incapable to create written documentations for their knowledge expansion that can be accessed by other members of the firms. As the study assumed hybrid

structure to support the conversion process, however the in depth investigation illustrated that organizational structure support conversion processes in management consulting firms. Nevertheless, Laupase' study also asserted that effective reward system is one of the important components of a supportive organizational culture that facilitates the knowledge conversion process in organization whereas, IT moderately support the knowledge conversion process. Laupase concluded that this study provides basic guidelines to the researchers for converting the valuable tacit knowledge into explicit knowledge.

3.3.4 Choi's Model

Choi (2002) conducted an empirical study in order to investigate the relationship among knowledge creation process, knowledge management strategy firms' performance. The purpose of study was to examine the impact of knowledge creation process on organizational firms in the presence of knowledge management strategy. The study emphasized that knowledge is created through socialization, externalization, combination and internationalization (SECI). Furthermore, Choi classified the knowledge management strategy into human oriented strategy and system oriented strategy and firms' performance is measured by both financial and non-financial perspectives while business size, profitability, success rate, market share, growth rate and innovativeness are used to make comparison of firms with potential competitors. A survey instrument questionnaire used to collect the data from 58 firms out 441 firms and middle managers were targeted to get response from them on six point likert scale ranging from 1=very low to 6=very high.

The results of study revealed that both human and system oriented strategies have significant relationship with knowledge creation process and firms' performance where, human oriented strategy more influenced by socialization and system oriented strategy more influenced by combination of knowledge creation process, nevertheless the limitations of sample which contained to comparatively large profitable firms and due low response rate.

3.3.5 The Lee and Choi Model

Lee and Choi (2003) attempted to explore the relationship among knowledge management enablers, knowledge creation processes, organizational creativity and performance in list firms on Korean Stock Exchange. The study emphasized that culture, structure, people, and information technology are the factors of knowledge management enablers whereas study used socialization, externalization, combination, and internalization for knowledge creation process. The study focused both interview and survey method (questionnaire) to collect the data from respondents. The purpose of conducting the interviews was to get enrich understanding of relationship among knowledge management enablers, knowledge creation processes, organizational creativity and performance in list firms on Korean Stock Exchange. After the interviews, the study used the survey instrument (questionnaire) in order to corroborate the results of interviews with survey instrument. The study collected the data from 1425 middle managers employed in 58 firms through questionnaire where each item of questionnaire was based on six point Likert scale ranging from 1=very low to 6=very high. The results of study revealed that organizational culture is significantly related to knowledge creation process whereas; organizational structure fails to establish any significant relationship with the knowledge creation process of organization. The results of study also illustrated that information technology significantly related with combination variable of knowledge creation process. Moreover, Lee and Choi's model confirmed that knowledge creation process was significantly related with organizational creativity which in terms positively influenced the organizations' performance. Lee and Choi concluded in their study that organizations can achieve the strategic benefits of knowledge management through effective management of knowledge enablers and knowledge creation process. However, Lee and Choi (2003) suggested certain limitations of study as it focused only large and relatively profitable firms whereas the results of study may be vary in different settings of study like in small and medium enterprises.

3.3.6 Park's Model

Park (2006) found an empirical relationship while examining the relationship among knowledge infrastructure capability (i.e. technology, organizational culture and structure), knowledge process capability (i.e. knowledge acquisition, knowledge conversion, knowledge application, and knowledge protection) and knowledge management performance (i.e. knowledge effectiveness and knowledge satisfaction) and collected the data from Korean knowledge management experts. The study used survey instrument (questionnaire) to collect the data from 162 knowledge management experts who are employed in 128 organizations as per the existing list of Korean knowledge management experts. To test the model, the survey instrument was designed at five point Likert scale anchored with 1=strongly disagree to 5=strongly agree.

The Park's model has provided a clear framework to understand the relationship among knowledge management enablers, knowledge process capability and knowledge management performance. The results of Park's study indicated that (i) technology perform an important role in knowledge creation process of organization which has a significant and positive relationship with knowledge acquisition, conversion and protection (ii) organizational culture performed a significant and positive relationship with knowledge management performance, and knowledge application, (iii) organizational structure has a significant and positive relationship with all four components of knowledge creation process (i.e. knowledge acquisition, conversion, application, and protection) and as well with knowledge management performance.

This study has certain limitations as it was exclusively based on Korean firms with limited sample size of 162 questionnaires from 128 firms. Furthermore, Park (2006) argued that future researcher will get more better and reliable results, if it will be investigated on other geographical, economic and cultural settings. Moreover, the study recommended that future researchers need to apply real data of financial performance indicators such as Return on Investment (ROI), Return on Equity (ROI)

or profitability (EPS) that can be associated with knowledge management performance.

3.4 Development of Proposed Conceptual Model and Hypotheses

The proposed conceptual model in this study is supported by a strong theoretical premise that is resource based view (RBV) and its further transformation into knowledge based view (Rivard *et al.*, 2006; Guillen, 2000) in order to gain a holistic understanding and way KS practices lead banks' performance. After a comprehensive and critical review of literature, this premise suggests that KM enabled performance might be rooted through the identification of knowledge resources (knowledge assets) and knowledge process capabilities (Tanriverdi, 2005; Gold *et al.*, 2001; Marr *et al.*, 2004) and on other critical success factors of knowledge management (Mills and Smith 2011).

The conceptual model of study has identified and included high-commitment KS practices that may lead the banks' performance in an effective manner (Zack *et al.*, 2009; Marques and Simon 2006; Wang *et al.*, 2008; Zaim *et al.* 2007; Wang *et al.*, 2014). However, four mediating variables that is common refers as critical success factors of KM i.e. KM strategy, KM infrastructure capability, KM process capability and knowledge assets or intellectual capital practices (i.e. HC practices, SC practices, RC practices) which have further sub-dimensions are included in the model in order to formulate the optimal KM-driven performance mechanism (Tanriverdi, 2005; Gold *et al.*, 2001; Marr *et al.*, 2004; Zack *et al.*, 2009; Marques and Simon 2006; Wang *et al.*, 2008; Zaim *et al.* 2007; Wang *et al.*, 2014; Wu, and Chen 2014).

Furthermore, this present study divides multilayer concept of organizations' performance means banks' performance into four dimensions that is operational excellence, customer intimacy, product leadership and financial performance (Zack *et al.*, 2009; Marques and Simon 2006; Wang *et al.*, 2008; Zaim *et al.* 2007; Wang *et al.*, 2014; Wu, and Chen 2014). This model is formulated within the assumptions that RBV and KBV provide the constructed lenses through which to seek the underlying relationship of KM-driven performance mechanism in the context of financial sector

of Pakistan. In addition, major theories and models that have guided in constructing the proposed research model is Grant, (1996), Gold *et al.*, (2001), Alavi and Leidner, (2001), Choi's (2002) extended model, the Lee and Choi model (2003), Park's model (2006), Zack *et al.*, (2009), Zaim *et al.* (2007) and Marques and Simon (2006) and Wang *et al.*, (2014). The conceptual model of underlying study aims to measure the impact of KS practices on firms' performance in banking sector of Pakistan through mediation of critical success factors of KM. For that purpose, the theoretical model of study is based on three boxes. Box one represents domains of KS practices both explicit and tacit, box two demonstrating the role of critical success factor of KM (KM strategy, knowledge infrastructure capability, knowledge process capability and intellectual capital) to mediate the relationship between KS practices and firm's performance and box three highlights the measure of firm's performance (operational excellence, customer intimacy, product leadership and financial performance).

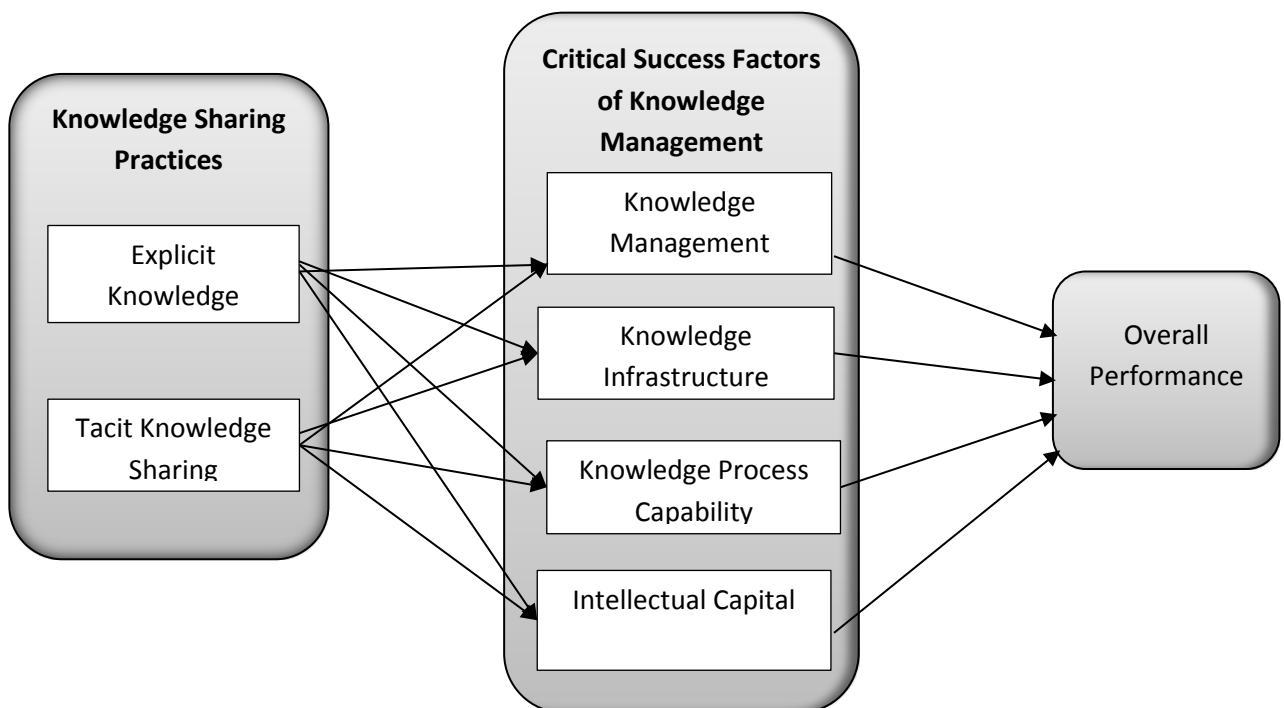


Figure 2 Proposed mediating model of KS-Driven performance

Setting out KBV which is the extension of RBV and extensive review of available literature, this study attempts to test the twenty proposed hypotheses which are given below:

H1a: Explicit knowledge sharing practices positively associated with system oriented strategy.

H1b: Explicit knowledge sharing practices positively associated with human oriented strategy.

H1c: Explicit knowledge sharing practices positively associated with technology.

H1d: Explicit knowledge sharing practices positively associated with decentralization.

H1e: Explicit knowledge sharing practices positively associated with formalization.

H1f: Explicit knowledge sharing practices positively associated with organizational culture.

H1g: Explicit knowledge sharing practices positively associated with knowledge acquisition.

H1h: Explicit knowledge sharing practices positively associated with knowledge protection.

H1i: Explicit knowledge sharing practices positively associated with knowledge conversion.

H1j: Explicit knowledge sharing practices positively associated with knowledge application.

H1k: Explicit knowledge sharing practices positively associated with human capital practices.

H1l: Explicit knowledge sharing practices positively associated with structural capital practices.

H1m: Explicit knowledge sharing practices positively associated with relational capital practices.

H2a: Tacit knowledge sharing practices positively associated with system oriented strategy.

H2b: Tacit knowledge sharing practices positively associated with human oriented strategy.

H2c: Tacit knowledge sharing practices positively associated with technology.

H2d: Tacit knowledge sharing practices positively associated with decentralization.

H2e: Tacit knowledge sharing practices positively associated with formalization.

H2f: Tacit knowledge sharing practices positively associated with organizational culture.

H2g: Tacit knowledge sharing practices positively associated with knowledge acquisition.

H2h: Tacit knowledge sharing practices positively associated with knowledge protection.

H2i: Tacit knowledge sharing practices positively associated with knowledge conversion.

H2j: Tacit knowledge sharing practices positively associated with knowledge application.

H2k: Tacit knowledge sharing practices positively associated with human capital practices.

H2l: Tacit knowledge sharing practices positively associated with structural capital practices.

H2m: Tacit knowledge sharing practices positively associated with relational capital practices.

H3a: System oriented strategy positively associated with overall performance of banks.

H3b: Human oriented strategy positively associated with overall performance of banks.

H4a: Technology positively associated with overall performance of banks.

H4b: Decentralization positively associated with overall performance of banks.

H4c: Centralization conversion positively associated with overall performance of banks.

H4d: Organizational culture positively associated with overall performance of banks.

H5a: Knowledge acquisition positively associated with overall performance of banks.

H5b: Knowledge protection positively associated with overall performance of banks.

H5c: Knowledge conversion positively associated with overall performance of banks.

H5d: Knowledge Application positively associated with overall performance of banks.

H6a: Human capital practices positively associated with overall performance of banks.

H6b: Structural capital positively associated with overall performance of banks.

H6c: Relational capital positively associated with overall performance of banks.

H7: Explicit knowledge sharing practices positively associated with overall performance of banks.

H8: Tacit knowledge sharing practices positively associated with overall performance of banks.

Chapter 4

METHODOLOGY

4.1 Research Approach

Research paradigms provide constructive approach to constitute a valid research (Cresswell, 2003). It guides the researchers in selecting which research methods will be more suitable in nourishing knowledge in any given study. Creswell, (2003) argues that researcher claims for any knowledge means that he or she try to determine certain procedures or methods to constitute a valid research that comes from strategy of inquiry. Researcher claims for knowledge following the research paradigms or philosophical assumptions: ontological (nature of knowledge or process of constructing reality), epistemology (how it is recognized), axiology (what is the role of knowledge), rhetoric (how to write about knowledge), methodology (process of study or tools used to know the reality) (Creswell and Clark, 2007; Denzin and Lincoln 1998). These paradigms are referred as philosophical assumptions or more broadly research methodologies (Neuman, 2000; Crotty, 1998). A paradigm can be defined as a “set of interconnected assumptions about the social world which provides a conceptual framework for the organized study of that world” (Filstead, 1979, p.34). This suggests that paradigms assist the researcher for selecting the philosophical assumptions and techniques and tools to be used to conduct the study (Denzin and Lincoln 2000; Guba and Lincoln, 1994).

Numbers of studies suggest that there are generally three accepted schools of thoughts regarding philosophical realisms are: positivism, interpretivism/constructivism and pragmatism (Berger and Luckman 1967; Lincoln and Guba 1995 and 2000; Crotty 1998; Neuman 2000; Creswell 2007). Positivism also refers as post-positivism, quantitative or empirical research that provides scientific approach to warrants the knowledge (Bryman 2004). Creswell (2003) suggests that positivism realism provide constructive lens for development of knowledge which is based on careful investigation or observation and numerically quantification of objective reality and follows the

hypothetical-deductive model (McGrath and Johnson). Positivism realism encompasses observation and description of phenomena, presentation of hypotheses, rigorous experiments, use of statistical inferences to test the hypotheses and eventually demonstration and interpretation of statistical results are used to test or verified the theories (Cacioppo *et al.*, 2004).

In contrast, constructivism, Creswell (2003) states that the purpose of research is inductive in nature where researcher extracts the meaning of world from subjective approaches of data collection. Further, in constructivism realism (qualitative research) individuals get understanding of phenomena based on their diverse and multiple experiences and researchers consider the multi-perspectives rather than restrict the meaning to only a specific category (Creswell, 2003). Finally, pragmatism realism is the combination of positivism and constructivism paradigms where researcher gets the understanding of problem considering both paradigms (Patton, 1990; Murphy, 1990; Powell 2001; Creswell, 2003).

Prior studies suggest that the selection of suitable approach or paradigm is based on research problem, or intent of study (Murphy, 1990; Powell 2001; Creswell, 2003; Bryman 2004). For illustration, if the intent of problem is to examine the factors which influence the dependent variable or to consider those predictors which influence the outcomes or to generalize and test the theory then positivism realism (quantitative research) is appropriate to use (Creswell, 2003). However, if the intent of study is to explore the phenomena or to get more in depth understanding about the scope of the study or concept due to limited research conducted on it then constructivism/interpretivism (qualitative research) is more appropriate for such type of study. Nevertheless, in case of mix method study or pragmatic approach is more appropriate where researcher intent of study is both to explore and generalize the study or theory using some sequential, concurrent and transformative procedures (Creswell, 2003). It may be concluded that the selection of appropriate research approach is solely based on intent of research problem or study which may address it more effectively or

efficiently in order to accomplish the research objectives (Neuman and Kreuger 2003; Mertens 1997). However, the purpose of underlying study is to determine the KS-driven performance and test the proposed mediating model using some predetermined approaches across a wide number of banks in Pakistan and to generalize the outcomes of study through a comprehensive sample. Moreover, the links of knowledge management and performance has been well developed and even has been realized in context of current study; therefore, present study implies the positivism paradigm which is more suitable for this nature of study to accomplish the objectives of study.

Setting out in this discourse, the present study is based on positivism realism (quantitative approach). There are different types of quantitative research: descriptive research, associational research and interventional research. The present study has three research questions and twenty hypotheses and tends to test these hypotheses using experimental, quantitative, descriptive, correlational and casual comparative. For hypotheses H1 to H5, the independent variables are explicit KS practices (H1), tacit KS practices (H2) practices, KM strategy (H3), explicit KS practices and KM strategy (H4), tacit KS practices and KM strategy (H5) and banks' performance is dependent variable. For hypotheses H6 to H8, the independent variables are knowledge infrastructure capability (H6), explicit KS practices and knowledge infrastructure capability (H7), tacit KS practices and knowledge infrastructure capability (H8) and banks' performance is the dependent variable. For hypotheses H9 to H11, the independent variables are knowledge process capability (H9), knowledge process capability and explicit KS practices (H10) and knowledge process capability and tacit KS practices (H11) and banks performance is the dependent variable. For hypotheses H12 to H 14, the independent variables are human capital practices (H12), human capital practices and explicit KS practices (H13), human capital practices and tacit KS practices (H14) and banks performance is the dependent variable. For hypotheses H15 to H17, the independent variables are structural capital practices (H15), structural capital practices and explicit KS practices (H16), structural capital practices and tacit KS practices (H17) and banks' performance is the dependent variables. For hypotheses H18 to H20, the independent variables are relational

capital practices (H18), relational capital practices and explicit KS practices (H19), relational capital practices and tacit KS practices (H20) and dependent variable is the banks' performance.

4.2 Description of Sampling

The sampling phase of study demonstrates the method of selecting a sample or segment of the population for analysis (Fraenkel and Wallen, 2000). It is a key step where researcher generalizes results or findings of the study on the entire population. Generally, the process of selecting sampling methods falls into two main types i.e. probability and non-probability sampling technique. Probability sampling technique refers to process of selecting sample from a population where each sample unit has equal chance of being selected or will has known probability and this purpose can be achieved through randomization. This type of sampling is broadly used by researchers in quantitative studies due to feature of equal chance of selection. Moreover, probability sampling is less prone to biasness which enables the researcher to generalize the findings of study using some statistical inferences. In contrast, non-probability sampling technique is more suitable in case of qualitative research where probability of selecting each sample unit is unknown which is potentially based on researcher judgments (Babbie, 1990). Considering the intent of underlying study and research problem, the present study employed the probability sampling technique as this technique is more appropriate for quantitative research which is less prone to systematic and sampling biases, less costly and time consuming and provides more realistic objectivity in evaluation of findings of study in contrast to non-probability. This study utilizes the simple random sampling where each sample unit has equal probability of selection (Cavana *et al.*, 2001).

The study uses the survey method to collect the data and tests the hypotheses. Although, collecting data from the survey methods have some disadvantages as it highlights the situation at a certain point in time. However it also has advantages relative to other qualitative methods of data collection. The survey method enables the researcher to precisely measure the constructs identified during theoretical phase of study through data collection using advance statistical techniques which helps researcher in quantification of multifaceted relationships (Gable, 1994). Generally, Yin (2003) states that case studies and other qualitative methods are used when the researcher wants to get

enrich understanding about the focal phenomena which needs to be explored and the relationships between concepts cannot be quantitatively calculated. Based on simple random sampling technique, the choice of sample is based on few considerations. First the geographic area of study is confined to province of Punjab (One of the most progressed provinces of Pakistan). Secondly, KS-driven performance is very crucial in highly complex financial institutions (banks) where knowledge resources (IC), KM capabilities and strategies perform a fundamental role for sustainable performance in a competitive environment. Specially, it is also important to get knowledge oriented production based on innovation in developing countries like Pakistan and forcing the highly complex banks' management to pay more attentions towards KM oriented performance so as to achieve competitive advantage. Thirdly, this study defines eligibility criteria for selecting sample where each respondent must be employed as a manager at middle or top level of that organization with the experience of minimum one year. Respondent must be a manager that is operations manager, credit manager, trade-finance manager, cash department in charge, branch manager, area manager or regional manager in that principal business units. The eligibility criteria for setting minimum one year experience will ensure that the respondents who are participating in the research study must have the rich understanding of KM mechanisms, systems or practices implemented in those principal organizations. Lastly, considering the importance of knowledge, it may be expected that selected banks would encourage KS practices more effectively to improve both operational and financial performance. To address the research questions and hypotheses, the present study uses the random sampling technique to select the data from employees working in banking sector of Pakistan.

4.3 Instrumentation

The study uses the survey instrument (questionnaire) to collect the data from the respondents. All the measurement items were adapted and reused from existing literature to confirm the reliability and construct validity of instrument particularly to measure the latent constructs.

4.3.1 Independent Variables

4.3.1.1 Knowledge Sharing Practices

Studies have suggested that knowledge is a valuable source to constitute intangible assets that turns to create the sustainable competitive advantage (Teece 2007). In organization perspectives, individuals learn not only from their own experiences but also from others. Hutzschenreuter & Horstkotte, (2010) and Kang & Kim, (2010) advocate that individuals integrate knowledge through interactions and share integrated knowledge among them as a source of feedback, explanation, help or advice. Such exchange of knowledge among individuals helps to originate new knowledge structures (Jo *et al.*, 2008; Kumar & Ganesh, 2009). Wang & Noe, (2010) argue that knowledge sharing is a source of competitive advantage focusing employees to mutually share their knowledge and add to knowledge application and innovation that turns to improve organization performance. KS practices have two sub-constructs (i.e. explicit KS practices and tacit KS practices). Explicit KS practices encompasses of all type of formal and institutionalized KS practices within the organization which is more commonly appeared during the job and relatively easy to codify, capture and transfer the knowledge. Explicit KS mechanism includes formal manuals, procedures, policies and information communication technology (ICT) promotes the employees' willingness to share explicit knowledge (Coakes, 2006; Huang *et al.* 2010). Explicit KS practices were reused or adapted from the work of (Wang *et al.*, 2014; Wang and Wang 2012; Liebowitz and Chen 2001) and some modifications are made to align the scale in context of Pakistan.

Contrary to explicit KS practices, the tacit knowledge is “individual, context specific, difficult to articulate or formalize and stock in the intellectual minds of people” (Tiwana, 2002). Unlike explicit knowledge which is easy to articulate in form of knowledge-books, manuals, reports, procedures and other compiled data, the tacit knowledge is implicit-beliefs, values and intuitions are formulated as result of individual's experiences (Hubert 1996). Therefore, tacit knowledge refers as implicit knowledge which is non-documented, embedded in minds of individuals (people-bounded knowledge) in form of

experiences and obtains from other people (Polanyi, 1966) whereas explicit knowledge refers as visible and documented tacit knowledge (Junnarkar and Brown 1997). Unlike explicit knowledge, it is bit difficult to express in written, verbal or symbolic form. Face to face interaction and human experiences are the primary means for tacit KS (Polanyi, 1966; Nonaka and Takeuchi, 1995). However, barriers to tacit knowledge sharing are the employees' unwillingness to share knowledge, limited awareness, and inability to express and apply the context specific tacit knowledge in other settings (Holste and Fields 2010). Studies also postulate that keys to success for tacit KS is employees' readiness and individual capacity to share what they know and learn (Holste & Fields, 2010; Lin, 2007; Megan *et al.*, 2007). Likewise, explicit KS practices, tacit KS practices are also adapted and reused from the work of (Wang *et al.*, 2014; Wang and Wang 2012; Liebowitz and Chen 2001) and some modifications are made to align the scale in context of study.

The generic reason why it is important to study the afore-mentioned KS practices because these practices provide an opportunity in the light of RBV and KBV by setting empirical evidence that required performance outcomes can be realized when organization use KS practices which indicate the employees' willingness to share both explicit and tacit knowledge.

4.3.2 Mediating Variables

4.3.2.1 Knowledge Management Strategy

KM strategy is reused and adapted from the work of Choi (2002), Choi and Lee (2002) and Hansen *et al.* (1999). Some modifications are also made to align the scale in context of study. The study uses two dimensions of KM strategy i.e. human oriented strategy (designed 3 items) and system oriented strategy (designed 3 items) as a first mediating variable. A five point semantic differential (Likert Scale) ranging from 1=strongly disagree to 5=strongly agree is anchored depending on variations in the response.

4.3.2.2 Knowledge Infrastructure Capability

For measurement of knowledge infrastructure capability, the study adopts Gold *et al.* (2001) and Choi (2002) typologies who view that technology, organizational culture and structure are the important elements of knowledge infrastructure capability. This study uses the three measurement items for technology, eight items for organizational structure (four items for decentralization and four items for formalization) and eight items for organizational culture. All the measurement items are modified in order to align the scale in the context of study. A five point semantic differential (Likert Scale) ranging from 1=strongly disagree to 5=strongly agree was anchored depending on variations in response.

4.3.2.2.1 Technology

This study uses the three measurement items for **technology**.

4.3.2.2.2 Decentralization

This study uses the three measurement items for **decentralization**.

4.3.2.2.3 Formalization

This study uses the four measurement items for **formalization**.

There are eight measurement items for **organizational culture**.

4.3.3 Knowledge Process Capability

The study adopts Gold *et al.* (2001) and Park's (2006) framework who view that knowledge acquisition, conversion, application and knowledge protection are four important dimensions of KPC. It uses six measurement items for knowledge acquisition, four items for knowledge protection, five items for knowledge conversion and six items for knowledge application.

4.3.3.1 Knowledge Acquisition

This study uses the six measurement items for **knowledge acquisition**.

4.3.3.2 Knowledge Conversion

This study uses six measurement items for **knowledge conversion**.

4.3.3.3 Knowledge Application

This study uses the six measurement items for **knowledge application**.

4.3.3.4 Knowledge Protection

This study uses the four measurement items for **knowledge protection**.

4.3.4 Intellectual Capital Practices

The measurement items for IC practices were adapted from (Hsu and Fang 2009; Bontis 1998; Youndt *et al.*2004; Wu *et al.* 2008; Longo and Mura 2011; Chen *et al.* 2009). HC, SC and RC practices are the important components of IC performance (Roos *et al.*1997; Sveiby 1997; Curado and Bontis, 2007; Reman *et al.*, 2011; Edvinsson and Malone 1997 and among others) that turns to boost the firms' performance. This study uses four items for human capital practices, six items for structural capital practices and four items for relational capital practices. All the measurement items are also reused or adapted from work of Chen *et al.* (2009), Wu *et al.* (2008), Hsu and Fang (2009), Youndt *et al.*(2004), Bontis (1998), Longo and Mura (2011) and are modified according to nature of study.

4.3.5 Dependent Variable

4.3.5.1 Organizational Performance

The overall organizational performance is measured based on four value disciplines i.e. operational excellence, customer intimacy, product leadership and financial achievement. The potential reason for using KS practices to bring out competitiveness which positively associated with firms' performance (Schulz and Jobe, 2001). Treacy and Wiersema (1995) suggest that operational excellence, customer intimacy and product leadership are the three generic value disciplines, provides the direction to bring competitive advantage in organization. In addition they state that operational excellence consolidate efficient internal operations used for product development, customer intimacy offers to better customer care and affiliation to satisfy and retain them and product leadership indicates development of innovative products and services. O'Dell *et al.*, (2003) point out that these three value disciplines provide competitive advantage for organizations and organizations normally implement effective KS mechanisms in order to boost one or more all of these value disciplines. Therefore, this study attempts to examine the impact of KS practices and its' mechanisms (proposed mediating model) on these value disciplines that help to provide sustainable performance through leveraging competitive advantage. To meet this objectives of study, all the measurement items are adapted from the work of Treacy and Wiersema (1995), Kaplan and Norton (2001a), Rai *et al.* (2006), Bowersox *et al.* (2000), Zack *et al.* (2009) Inman *et al.* (2011), Vaccaro *et al.* (2010), and among others. To measure the overall organizational performance using above mentioned four value disciplines, the study uses the 2 items for operational excellence, 2 items for customer intimacy, 2 items for product leadership and 2 items for financial performance which are given below:

4.4 Reliability and Validity of Instrument

The purpose of internal consistency of instrument used to measure the reliability of the instrument. The internal consistency of instrument tends to indicate that whether the scale or index measures what it is intended to measure (Creswell, 2003). Bryman and Bell (2003) suggested that reliability of the instrument addresses the issues to examine the respondent's score on multiple gauges and Cronbach's alpha (C- α) is the most

suggested technique to examine the internal consistency of instrument. The values of Cronbach's alpha (0=indicates no internal consistency and 1=indicates perfect internal consistency of instrument). However, as a rule of thumb value of (C- α =0.70 and above) is considered as acceptable level of internal consistency of instrument to further execute the study (Nunnly and Bernstein, 1994; Bryman and Bell, 2003). Wang *et al.*, (2014) conducted study to examine the effect of explicit and implicit KS practices on organizational performance and tested mediating role of intellectual capital in high tech industries of China. The internal consistency of instrument is assessed using reliability analysis (Cronbach alpha). The value of Cronbach alpha for both explicit and tacit KS was 0.94 indicating high internal consistency and exceeding the acceptable standard of 0.70. Similarly, Wang and Wang (2012) in a study attempted to examine relationship of knowledge sharing, innovation and firms' performance. Meanwhile, they have established strong internal reliability representing coefficient of alpha values 0.96 for explicit and 0.97 for tacit KS practices. In case of knowledge management strategy, Choi (2002) in his study employ the survey instrument to collect the data from middle level managers and examine the internal consistency of instrument using Cronbach alpha for reliability analysis. Choi's uses two dimensions of knowledge management strategy: system oriented and human oriented strategy. The coefficient values of Cronbach alpha were 0.7902 for human oriented strategy and 0.8268 for system oriented strategy. Mills and Smith (2010) attempted to examine the impact of knowledge management enablers and processes on firms' performance. They have established the internal consistency of instrument using coefficient of Cronbach alpha. The values of C- α is demonstrated strong internal consistency of instrument presenting 0.924 for technology, 0.918 for organizational structure and 0.921 for organizational culture for knowledge infrastructure capability or knowledge enablers exceeding the minimum thresholds of 0.70. Likewise, Lee and Choi (2003) evaluated strong internal consistency while presenting knowledge management enablers' scale. The values of coefficients were .8481 for technology, .8475 for organizational structure and .8932 for organizational culture.

Mills and Smith (2010) have also evaluated strong internal reliability while examining the relationship of knowledge process capability with organizational performance. The values of coefficient of alpha were 0.923 knowledge acquisition, 0.950 for knowledge conversion, 0.963 knowledge applications and 0.948 for knowledge protection thus exceeding recommended thresholds. Similarly, Park's (2006) study have also assessed strong internal reliability ranging from 0.8368 to 0.9444 for all the four sub-constructs of knowledge process capability and exceeding suggested cut-offs hence provided a good estimates of internal reliability. Wang *et al.*, (2014) in their mediation model of IC have assessed strong internal reliability. The values of C- α were 0.89 for human capital, 0.95 for structural capital and 0.92 relational capital. Likewise, Sharabati *et al.*, (2010) results of Cronbach alpha's coefficient ranged between 0.78 and 0.90 thus providing the good estimates of internal reliability analysis which were consistent with the results of (Bontis, 1998; Miller *et al.*1999, Bollen *et al.* 2005; Bin Ismail, 2005; Moslehi *et al.*2006). The final part of instrument measures the overall performance being the dependent variable of study. Wang *et al.*, (2014) in their study measures the overall performance through assessing the operational and financial performance of firms. The coefficient of Cronbach alpha values ranges from 0.89 to 0.94 thus presenting the good estimate of internal reliability which were in line with the studies of (Gold *et al* 2001; Mills and Smith 2010; Zack *et al.*, 2009).

Both convergent and discriminant validity are important for validity analysis of study. Convergent validity refers to “degrees where items are supposed to measure a single construct agree with each other” (Wang *et al.*, 2014, p 17). Authors use various techniques and set different thresholds to assess the convergent validity. Hair *et al.*, (1998) argue that factor loading has practical consideration if the value of factor is 0.35 or above. Fornell and Larcker, (1981) states exploratory factor analysis is the most robust technique to assess the convergent validity. The values of factor loadings should be significant and greater than 0.60, composite reliability 0.80 or greater than average variance extracted (AVE) should be more than 0.50 for all the constructs used in the study (Fornell and Larcker, 1981). Wang *et al.*, (2014) conducted study to examine the

effect of explicit and implicit KS practices on organizational performance and tested the mediating role of intellectual capital in high tech industries of China. The exploratory factor analysis (EFA) is used to examine the factorial validity of constructs. The value of exploratory factor loading ranges from 0.75 to 0.90 for explicit KS and from 0.76 to 0.88 for tacit KS.

Choi (2002) in his empirical investigation of knowledge management enablers, process with organizational performance reported the values of exploratory factor loadings from .745 to .867 (for system orientation strategy) and .705 to .837 (for human orientation strategy). Similarly, Keskin (2005) also established the high factor loadings while determining the relationship of explicit and tacit KM strategy with organizational performance, ranging from .825 to .908 for system orientation strategy and 0.869 to .869 for the human orientation strategy. Lee and Choi (2003) reported .732 to .897 (for technology), .669 to .868 (for organizational structure), and .793 to .865 (for organizational culture). Park (2006) reported from moderated to high factor loadings ranging from .753 to .869, .823 to .888, .850 to .914 and .625 to .851 for knowledge acquisition, knowledge conversion, knowledge protection and knowledge application respectively. Chin, (1998) argued the minimum threshold is 0.70 for loadings items and acceptable level of loading factors is 0.60 in case additional indicators. Mills and Smith (2010) reported loading factors ranging from 0.693 to 0.898 for technology, 0.770 to 0.844 for organizational culture, 0.668 to 0.860 for organizational structure, 0.806 to 0.866 for knowledge acquisition, 0.836 to 0.905 for knowledge conversion, 0.844 to 0.923 for knowledge application, 0.753 to 0.888 for knowledge protection and 0.781 to 0.906 for organizational performance respectively. Wang *et al.*, (2014) while testing the mediating model have assessed strong loading factors 0.74 to 0.84 for human capital, 0.78 to 0.87 for structural capital, and 0.78 to 0.91 for relational capital. Wu and Chen (2014) evaluated the KM-enabled performance through the testing the mediating role of business process capabilities and organizational learning in manufacturing sector of china. They have used four sub-constructs namely operational excellence, customer intimacy, product leadership and financial performance to evaluate the overall

performance, presenting 0.88 to 0.92 for operational excellency, 0.90 to 0.92 for customer intimacy, 0.87 to 0.91 for product leadership and 0.85 to 0.91 financial achievement respectively. Similarly, strong loading items reported by Wang *et al.*, (2014) while examining the relationship between KS, IC and performance where overall performance of high-tech sector of china is measure through operational and financial performance, representing 0.73 to 0.89 for operational performance, 0.73 to 0.90 for financial performance. Gold *et al.*, (2001) established the strong loading items in their study ranging from 0.78 to 0.88 for organizations effectiveness while determining the relationship of knowledge management capabilities with organizational effectiveness.

4.5 Pilot Study

Initially, a pilot study was conducted to examine the internal consistency and inter-rater reliability of the instrument considering the sample of 75 banks' employees using the stratified random sampling, 55 employees were from private banks and 20 from public banks. Of the respondents only 41 valid questionnaires were considered for analysis from private banks, representing 75% response rate and 8 valid questionnaires were considered for analysis from public banks thus demonstrating 40% response rate. Of the response 12 questionnaires were discarded due invalid or incomplete response and 14 respondents did provide the response. The overall response rate for pre-testation was 65% where 40% respondents were male and 25% respondents were female. The results of pilot study represent strong internal consistency of instrument. The value of coefficient of alpha ($C-\alpha$) ranged from 0.72 to 0.92 (explicit knowledge sharing practices 0.78 tacit knowledge sharing practices, 0.76, system oriented strategy 0.72, human oriented strategy 0.76, technology 0.74, decentralization, 0.73, formalization 0.79, organizational culture, 0.81, knowledge acquisition, 0.85, knowledge protection 0.83, knowledge conversion, 0.79, knowledge application 0.80, human capital practices, 0.88, structural capital practices, 0.85, relational capital practices, 0.89, and overall banks performance 0.92). The higher values of ($C-\alpha$) of pilot study exhibits presence of strong internal

consistency which suggest that all the multi-items constructs possess strong reliability among them.

Furthermore, to test the convergent validity, in measurement model of pilot study, the Principal Component Analysis (PCA) with varimax rotation method was used where all the loading items (λ) ranged from 0.65 to 0.74. Straub *et al.*, (2004) recommend the existence of construct validity in survey data if eigenvalues are greater than 1 with loadings and no cross loadings of items 0.40. There were sixteen constructs in this study and both convergent and discriminant validity was examined through eigenvalues which were more than 1 with loadings and no cross loadings items were also above 0.40. Hence results of pilot study satisfactorily meet the criterion of construct validity, thus indicates existence of construct validity.

4.6 Data Collection Procedures

This study was based on survey method questionnaire to collect the data from the respondents. Survey method has advantage because it requires minimum staff, cost and time to collect the data from the participants of study (Dillman 2000). Prior to data collection, a formal consent is obtained from the management of respondents about the participation of their employees in the study. This study used the self-administered approach to get the response from the respondents. Therefore, it is one of the major cause that turns to get very good response rate of approximately of 36%. Initially, questionnaires were distributed to middle and senior level banks' employees along with the covering letter in order to address purpose and significance of study (see appendix (B) and questionnaires with dully instructions based on five point semantic differential (Likert Scale) ranging from 1=strongly disagree to 5=strongly agree was anchored depending on variations in response (See Appendix (C)). Realizing the importance of study, the respondents were requested to reply within 2 weeks; however some of the respondents returned the dully filled questionnaire on spot, others took the time of 1 to 3 weeks in filling and returning the questionnaires. A rigorous follow up such as reminder

calls, emails and personal contacts were used to get remaining questionnaires. Data collection and screening process was completed in approximately 5 months.

The primary concern of every researcher is to obtain the consent from the participants' in order to protect them from harm of study and to ensure the confidentiality of their information. Keeping in view ethical considerations of study, it was ensured that participants have complete knowledge about purpose and significance of study before to participate in study. This was ensured through getting informed both formal and informal consent of participants before to involve in study. Participants were also given the right to quit or withdraw from study at any time. Further, voluntarism was also considered while in data collection process. The information provided by respondents was kept confidential and privacy of information is strictly adhered.

Chapter 5

ANALYSIS AND RESULTS

This chapter presents the analysis of survey data using SPSS 0.18 and AMOS graphics. The first section of the study presents the descriptive statistics which cover the demographic profiles of the respondents, descriptive summary including the mean and standard deviation, followed by reliability and validity analysis of all the latent constructs. The second section demonstrates the results of standardized path coefficients of structural model and mediation analysis using AMOS graphic in order to test the hypothesized model presented in conceptual model. Third section presents result of multiple regressions to find the individual effect of knowledge sharing practices and mediating variables individual effect on overall performance of banks.

5.1 Descriptive Statistics

5.1.1 Demographic Profile of Respondents

A total of 1250 questionnaires were distributed to banks employees working in both private and public sector banks in the province of Punjab (one of the most developed and populated province of Pakistan). 1110 questionnaires were received and out of which 810 questionnaires were considered for analysis and remaining questionnaires were discarded due to incomplete or selecting the same response for each question. Further, keeping in view the survey method (i.e. key informant approach), this study only considers middle and senior level employees because they are the best source of information providers. Table 5 provides the brief demographic profile of respondents relating to gender, age, qualification, sector, employees rank, experience and salary.

Table 5.1 Demographic Profile of Respondents

Respondent demographics	Frequency	Percentage
Gender (N=725)		
Male	637	88
Female	88	12
Age (N=747)		
under 30	75	10
30-39	180	24
40-49	297	40
50-59	105	14
Above 60	90	12
Qualification (N=634)		
Graduates	313	49
Master's Degree	280	44
M.Phil Plus Other professional degree	41	3.3
Employees' Rank (N=792)		
Area Managers/Regional Managers	85	11
Vice President	175	22
Branch Manager/Assistant Vice President	165	20
Credit Manager	120	15
Trade Finance Manager	106	13
Manager Operations	141	18
Experience (N=755)		
1- 5	95	13
6- 10	220	29
11- 15	184	24
16-20	111	15
Above 20 year	145	19
Salaries (N=501)		
Below Rs. 35000	121	24
Rs. 35000-50000	130	26
Rs.51000-75000	155	31
Above Rs.75000	95	19

Table 5.1 presents that out of 725 respondents, 637 (88%) are males and 88(12%) are females; 85 respondents did not provide relating to their gender. Of the 747 respondents, 75 (10%) are below the age of 30, 180 (24%) are within the age range of 30-39, 297(40%) are within the range of 40-49, 105 (14%) are within the range of 50-59 and 90 (12%) respondents are above age of 60 years. This shows that most of the respondents fall with the age range of 30-49, who are middle and senior level employees. However, 63(8.4%) respondents did not provide any information about their ages. Of the respondents, 313(49%) are graduates, 280 (44%) hold master's degree and 41 (3.3 %) hold's professional degrees and others. However, 176 (22%) respondents did not provide the information about their qualifications.

Of the 755 respondents, 95 (13%) have the job experience of 1 to 5 year, 220 (29%) have job experience of 6 to 10 years, 184 (24%) have job experience of 11 to 15 years, 111(15%) have job experience of 16 to 20 years and 145 (19%) respondents have job experience of more than 20 years. This reveals that most of the respondents have experience range of 6 to 20 years. However, 55 (7.6%) did not provide the information relating to job experience. Of the 501 respondents, 121 (24%) are drawing salaries below Rs. 35000, 26% are drawing salaries between Rs.35000 to Rs. 50000, 31% are drawing salaries Rs. 51000 to Rs. 75000 and 19% respondents are drawing salaries more than Rs.75000.

5.1.2 Descriptive Summary

This study was based on a survey method on a five point likert scale (1=strongly disagree and 5=strongly agree). There are 82 items are used to measure the 19 constructs (for instance two constructs for KS practices, two KM strategy, four for knowledge infrastructure capability, four for knowledge process capability and three for IC practices) and four constructs (e.g. operational excellence, customer intimacy, product leadership and financial achievements) to measure the overall performance of banks. Five items were asked to measure the explicit knowledge sharing practices, six items were asked to measure the tacit knowledge sharing practices, three items for system oriented strategy,

three items for human oriented strategy, three items for technology, four items for decentralization, four items for formalization, eight items for organizational culture, six items for knowledge acquisition, four items for knowledge protection, five items for knowledge conversion, six items for knowledge application, four items for human capital, six items for structural capital, four items for relational capital, three items for operational excellence, two items for customer intimacy, two items for product leadership, three items for financial achievements.

Table 5.2 Descriptive Statistics of Survey Items

Items	N	Min	Max	Mean	S.D
EKSP1	810	1.00	5.00	3.470	1.021
EKSP2	810	1.00	5.00	3.601	0.974
EKSP3	810	1.00	5.00	3.694	1.023
EKSP4	810	1.00	5.00	3.541	0.951
EKSP5	810	1.00	5.00	3.493	1.038
TKSP1	810	1.00	5.00	3.589	0.989
TKSP2	810	1.00	5.00	3.476	0.882
TKSP3	810	1.00	5.00	3.475	0.910
TKSP4	810	1.00	5.00	3.589	0.953
TKSP5	810	1.00	5.00	3.623	0.900
TKSP6	810	1.00	5.00	3.657	1.005
SOS1	810	1.00	5.00	3.477	0.983
SOS2	810	1.00	5.00	3.670	0.940
SOS3	810	1.00	5.00	3.689	0.895
HOS1	810	1.00	5.00	3.441	1.052
HOS2	810	1.00	5.00	3.415	1.027
HOS3	810	1.00	5.00	3.421	1.005
T1	810	1.00	5.00	3.525	1.017
T2	810	1.00	5.00	3.516	0.913
T3	809	1.00	5.00	3.674	0.931
D1	810	1.00	5.00	2.820	1.243
D2	810	1.00	5.00	2.991	1.121
D3	810	1.00	5.00	2.863	1.222
D4	810	1.00	5.00	3.336	1.115
F1	810	1.00	5.00	3.674	0.994
F2	810	1.00	5.00	3.525	0.979
F3	809	1.00	5.00	3.776	0.967
F4	810	1.00	5.00	3.659	1.096

Items	N	Min	Max	Mean	S.D
OC1	810	1.00	5.00	3.365	1.037
OC2	810	1.00	5.00	3.635	0.901
OC3	810	1.00	5.00	3.686	.948
OC4	810	1.00	5.00	3.453	1.031
OC5	810	1.00	5.00	3.759	0.919
OC6	810	1.00	5.00	3.624	0.948
OC7	810	1.00	5.00	3.604	0.936
OC8	810	1.00	5.00	3.550	0.960
KAC1	810	1.00	5.00	3.507	1.020
KAC2	810	1.00	5.00	3.587	.913
KAC3	810	1.00	5.00	3.502	1.025
KAC4	810	1.00	5.00	3.675	0.952
KAC5	810	1.00	5.00	3.628	0.932
KAC6	810	1.00	5.00	3.655	0.965
KP1	810	1.00	5.00	3.721	0.987
KP2	810	1.00	5.00	3.597	0.902
KP3	810	1.00	5.00	3.549	0.948
KP4	810	1.00	5.00	3.674	0.958
KC1	810	1.00	5.00	3.403	1.060
KC2	810	1.00	5.00	3.481	0.963
KC3	810	1.00	5.00	3.411	0.975
KC4	810	1.00	5.00	3.512	0.933
KC5	810	1.00	5.00	3.525	0.983
KAP1	810	1.00	5.00	3.609	1.039
KAP2	810	1.00	5.00	3.548	0.995
KAP3	810	1.00	5.00	3.406	1.003
KAP4	810	1.00	5.00	3.619	0.920
KAP5	810	1.00	5.00	3.614	.941
KAP6	810	1.00	5.00	3.607	0.994
HC1	810	1.00	5.00	3.640	0.962
HC2	810	1.00	5.00	3.667	0.935
HC3	810	1.00	5.00	3.321	1.044
HC4	809	1.00	5.00	3.561	1.019
SC1	810	1.00	5.00	3.673	.989
SC2	810	1.00	5.00	3.527	0.999
SC3	810	1.00	5.00	3.568	1.047
SC4	810	1.00	5.00	3.517	1.136
SC5	810	1.00	5.00	3.613	0.976
SC6.	810	1.00	5.00	3.641	1.022
RC1	810	1.00	5.00	3.565	0.947
RC2	810	1.00	5.00	3.733	0.942

Items	N	Min	Max	Mean	S.D
RC3	810	1.00	5.00	3.749	1.979
RC4	810	1.00	5.00	3.841	0.883
OE1	810	1.00	5.00	3.707	0.997
OE2	810	1.00	5.00	3.680	0.920
OE3	810	1.00	5.00	3.707	0.997
CI1	810	1.00	5.00	3.681	0.921
CI2	810	1.00	5.00	3.674	0.939
PL1	810	1.00	5.00	3.753	0.946
PL2	810	1.00	5.00	3.784	0.924
FE1	810	1.00	5.00	3.785	0.937
FE2	810	1.00	5.00	3.754	0.998
FE3	810	1.00	5.00	3.693	0.975
Valid N (List wise)	806				

5.2 Reliability Analysis

The purpose of internal consistency of instrument used to measure the reliability of the instrument. The internal consistency of instrument tends to indicate that whether the scale or index measures what it is intended to measure (Creswell, 2003). Table 5.3 presents the values of coefficient of Cronbach's alpha ($C-\alpha$) examine the internal consistency of measurement items. The values of ($C-\alpha$) ranges from 0.71 to 0.90 indicates that each multiple item construct has strong internal consistency for example explicit knowledge sharing ($C-\alpha=0.887$), tacit knowledge sharing practices ($C-\alpha=0.800$), system oriented strategy ($C-\alpha=0.735$, human oriented strategy ($C-\alpha=0.761$), technology ($C-\alpha=0.710$), decentralization ($C-\alpha=0.711$), formalization ($C-\alpha=0.781$), organizational culture ($C-\alpha=0.794$), knowledge acquisition ($C-\alpha=0.775$), knowledge protection ($C-\alpha=0.706$), knowledge conversion ($C-\alpha=0.818$), knowledge application ($C-\alpha=0.799$), human capital practices ($C-\alpha=0.734$), structural capital practices ($C-\alpha=0.836$), relational capital practices ($C-\alpha=.747$), overall performance ($C-\alpha=0.873$). The higher values of ($C-\alpha$) indicates the higher internal consistency for each constructs.

Table 5.3 Reliability of Multi-item Constructs

Constructs	Valid (N)	Number of Items	Cronbach's Alpha
Explicit Knowledge Sharing	810	05	0.887
Tacit Knowledge Sharing	810	06	0.800
System Oriented Strategy	810	03	0.735
Human Oriented Strategy	810	03	0.761
Technology	810	03	0.710
Decentralization	810	03	0.711
Formalization	810	04	0.781
Organizational Culture	810	08	0.794
Knowledge Acquisition	810	06	0.775
Knowledge Protection	810	04	0.706
Knowledge Conversion	810	05	0.818
Knowledge Application	810	06	0.799
Human Capital Practices	810	04	0.734
Structural Capital Practices	810	06	0.836
Relational Capital Practices	810	04	0.747
Overall Performance	810	11	0.873

5.3 Correlation Analysis

We have employed the correlation analysis to explore the linear relationship among the variables. The purpose of this analysis provides the strength of relationship among the variables, while cause and effect relationship may be examined using regression analysis (Wonnacott and Wonnacot, 1990; Zou *et al.*, 2003). The direction of relationship among the variables is examined by considering sign which may be positive or negative. The strength of relationship is measured by absolute value of correlation

coefficient (r) which may fall between +1 to -1. The value of +1 or near to one indicates perfect positive correlation between the variables and value of -1 or near to -1 indicates the perfect negative correlation between the variables whereas $r=0$ indicates that there is no correlation among the variables. We have employed the Pearson correlation coefficient, because this correlation coefficient is appropriate for interval scale data whereas Spearman correlation coefficient is appropriate for ordinal scale data (Zou *et al.*, 2003). The results of correlation analysis reveal that all the constructs positively correlated except decentralization with explicit KS practices ($r=-.024$), decentralization with tacit KS practices ($r=.033$) and decentralization with system oriented strategy ($r=-.035$). See appendix C for more details.

5.4 Factor Analysis

The study employs principal components analysis (PCA), varimax-rotation method with Kaiser Normalization to examine the construct validity (both convergent and discriminant validity). Factor analysis is a class of multivariate procedures to identify the underlying structure in a data matrix (Hair. *et al.*, 1995). It covers the set of multivariate procedures to investigate the structure which is the interrelation or correlation among the variables. This indicates that factor analysis help to examine the groups of variables that have some commonalities. Factory analysis is used to condense the large number of items into small number of items of uncorrelated factors. The purpose of factor analyses is to capture the original information contained in uncorrelated factors in a more parsimonious way which helps investigator to understand the interpretation of complex phenomena. For instance, if factor analyses condense the six items of explicit knowledge sharing into just two factors then explicit knowledge sharing can be analyzed as a change in an independent variable. It is also important to note that one of the generic assumptions of factor analysis is that the dimensions of the construct are correlated. Further Kaiser-Meyer-Olkin (KMO) measure of sample adequacy and Barlett's test of sphericity is used to examine the adequacy of sample to apply factor analysis.

5.4.1 Kaiser-Meyer-Olkin (KMO) measure of sample adequacy test and Barlett's test of Sphericity

KMO measure of sample adequacy test is used to examine the suitability of the sample to execute the factor analysis. The value of KMO ranges from 0 to 1. A value of 0 indicates that there is larger dispersion in the patterns of correlations and application of factor analysis becomes inappropriate whereas value of KMO near to 1 indicates that the pattern of correlation is compact, hence application of factor analysis becomes appropriate. Hinton *et al.*, (2004) suggest that KMO value of 0.50 is poor, 0.60 is acceptable and closer to 1 is more appropriate for the application of factor analysis. As a rule of thumb, KMO value “between 0.50 to 0.70” is mediocre, “between 0.70 to 0.80” are good, “between 0.80 to .90” are great and values of above 0.90 are superb (Hutcheson and Sofroniou, 1999).

Table 5.4 presents the results of KMO and Bartlett's test of sphericity which advocates that all the values of KMO for each measurement construct is parsimoniously meet the minimum threshold of 0.60 (i.e. KMO for explicit knowledge sharing practices=.879; KMO for tacit knowledge sharing practices=.830; KMO for system oriented strategy=.627; KMO for human oriented strategy=.634; KMO for technology=.673; KMO for decentralization=.769;KMO for formalization=.605; KMO for organizational culture =.828; KMO for knowledge acquisition=.835; for knowledge protection=.719; for knowledge conversion=.811; KMO for knowledge application=.820; for human capital practices=.680; KMO structural capital practices=.830; for relational capital practices=.760; and KMO for organizational performance=.839).

Table 5.4 KMO and Bartlett's Test

Constructs	No. of Items	KMO Measure of sample adequacy	Bartlett's Test of Sphericity Chi-square	Bartlett's Test of Sphericity Significance
Explicit Knowledge Sharing Practices	05	.879	2238.6223	.000
Tacit Knowledge Sharing Practices	06	.830	1302.4643	.000
System Oriented Strategy	03	.627	359.4020	.000
Human Oriented Strategy	03	.634	200.959	.000
Technology	03	.673	460.926	.000
Decentralization	04	.769	836.608	.000
Formalization	04	.605	279.972	.000
Organizational Culture	08	.828	1595.1058	.000
Knowledge Acquisition	06	.835	1120.8484	.000
Knowledge Protection	04	.719	600.692	.000
Knowledge Conversion	05	.811	1340.4359	.000
Knowledge Application	06	.820	1408.1403	.000
Human Capital Practices	04	.680	798.446	.000
Structural Capital Practices	07	.830	1838.6718	.000
Relational Capital Practices	04	.760	710.119	.000
Overall Performance	11	.839	4659.9667	.000

5.4.2. Eigenvalues:

Table 5.5 exhibits the results of principal components analysis for all the measurement constructs of the selected model with components, eigenvalues, percentage of variance explained and cumulated percentage of variance explained. This table reveals that eigenvalues are greater than 1 and one principal component is extracted for each construct. Explicit knowledge sharing practices with eigenvalues greater than 1 and

explaining 69.257% cumulated variance, tacit knowledge sharing practices with eigenvalues greater than 1 and explaining 50.341% cumulated variance, system oriented strategy with eigenvalues greater than 1 and explaining 59.312% cumulated variance, human oriented strategy with eigenvalues greater than 1 and explaining 50.940% cumulated variance, technology with eigenvalues greater than 1 and explaining 63.569% cumulated variance, decentralization components with eigenvalues greater than 1 and explaining 59.424%, formalization with eigenvalues greater than 1 and explaining 42.965% cumulated variance, organizational culture with eigenvalues greater than 1 and explaining 41.742% cumulated variance, knowledge acquisition with eigenvalues greater than 1 and explaining 47.774% cumulated variance, knowledge protection components with eigenvalues greater than 1 and explaining 53.546% cumulated variance, knowledge conversion with eigenvalues greater than 1 and explaining 58.068% cumulated variance, knowledge application with eigenvalues greater than 1 and explaining 50.597% cumulated variance, human capital practices with eigenvalues greater than 1 and explaining 56.141% cumulated variance, structural capital practices with eigenvalues greater than 1 and explaining 55.245% cumulated variance, relational capital practices with eigenvalues greater than 1 and explaining 57.066% cumulated variance and overall performance with eigenvalues greater than 1 and explaining 44.563% cumulated variance.

Table 5.5 Eigenvalues

Constructs	Components	Total	Initial eigenvalues	
			% of Variance Explained	Cumulative % of Variance Explained
Explicit Knowledge Sharing Practices	Comp1	3.463	69.257	69.257
Tacit Knowledge Sharing Practices	Comp1	3.020	50.341	50.341
System Oriented Strategy	Comp1	1.779	59.312	59.312
Human Oriented Strategy	Comp1	1.528	50.940	50.940
Technology	Comp1	1.907	63.569	63.569
Decentralization	Comp1	2.377	59.424	59.424
Formalization	Comp1	1.719	42.965	42.965
Organizational Culture	Comp1	3.339	41.742	41.742
Knowledge Acquisition	Comp1	2.866	47.774	47.774
Knowledge Protection	Comp1	2.142	53.546	53.546
Knowledge Conversion	Comp1	2.903	58.068	58.068
Knowledge Application	Comp1	3.036	50.597	50.597
Human Capital Practices	Comp1	2.246	56.141	56.141
Structural Capital Practice	Comp1	3.315	55.245	55.245
Relational Capital Practices	Comp1	2.283	57.066	57.066
Overall Performance	Comp1	4.902	44.563	44.563

5.4.3 Exploratory Factor Analysis for Explicit and Tacit Knowledge Sharing Scale

Table 5.4 exhibits the results of Principal Components Analyses (PCA) using varimax-rotation method with Kaiser Normalization to examine the construct validity for knowledge sharing practices. The number of factor originally extracted was based on scree plot and number of items with eigenvalues greater than 1. Knowledge sharing practices has two dimensions, “explicit knowledge sharing” and “tacit knowledge

sharing”. Scree plot and eigenvalues suggests one factors solution for both explicit and tacit knowledge sharing practices. Further, eigenvalues are greater than 1 and more than half of variance is explained by component (i.e. accumulated variance for explicit knowledge sharing=69.257%). Similarly in case of tacit knowledge, the eigenvalues are greater than and more than half of accumulated variance i.e. 50.341% is accounted component.

Five items are identified to define the explicit knowledge sharing practices: (a) item (EKSP1) for factor 1 “frequently share existing reports and official documents with colleagues” with a loading of 0.706; (b) item (EKSP2) “frequently collect reports and official documents from others” with a loading of .835; (c) item (EKSP3) “frequently encouraged by knowledge sharing mechanisms” with a loading of .884; (d) item (EKSP4) “frequently offered a variety of training and development programs” with a loading of .862; and (e) item (EKSP5) “facilitated by IT systems invested for knowledge sharing” with a loading .861. Thus all the loading items of explicit knowledge sharing satisfactorily meet the minimum threshold of 0.40 which confirm the existence of convergent validity (Hair *et al.*, 1998).

Six items are identified to define the tacit knowledge sharing practices: (a) item (TKSP1) “frequently share knowledge based on their experience” with a loading of 0.638; (b) item (TKSP2) “frequently share knowledge of know-where or know-whom with others” with a loading of .685; (c) item (TKSP3) “frequently collects knowledge of know-where or know-whom” with a loading of .743; (d) item (TKSP4) “frequently share knowledge based on their expertise” with a loading of .781; (e) item (TKSP5) “frequently collect knowledge from others based on their expertise” with a loading .716; and (f) item (TKSP6) “share lessons from past failures when they feel that it is necessary.” with a loading of .686. Thus all the loading items (λ) of tacit knowledge sharing satisfactorily meet the minimum threshold of 0.40 which confirm the existence of convergent validity (Hair *et al.*, 1998).

Table 5.6: Factor Items Loadings for the Explicit and Tacit Knowledge Sharing Scale

Items	Knowledge Sharing Practices	Loadings
Factor I		
Explicit Knowledge Sharing (5 items)		
EKSP1		.706
EKSP2		.835
EKSP3		.884
EKSP4		.862
EKSP5		.861
Factor II		
Tacit Knowledge Sharing Practices (6 items)		
TKSP1		.638
TKSP2		.685
TKSP3		.743
TKSP4		.781
TKSP5		.716
TKSP6		.686

5.4.4 Exploratory Factor Analysis for knowledge management strategy

Table 5.5 presents the results of Principal Components Analyses (PCA), varimax-rotation method with Kaiser Normalization to examine the construct validity for knowledge management strategy. The number of factory originally extracted was based on scree plot and number of items with eigenvalues greater than 1. The knowledge management strategy had two dimensions, “system oriented strategy” and “human oriented strategy”. Scree plot indicates one component factor and eigenvalues are greater than 1 explaining 59.312% accumulated variance for system oriented strategy and 50.940% accumulated variance for human oriented strategy (**See table #5.5**). Factor I, “system oriented strategy” consists of three items: item (SOS1) “Codified knowledge i.e. know-how, technical skill etc.”; item (SOS2) “results of projects and meetings are documented”; and item (SOS3) “knowledge is shared in codified forms like manuals or documents”. The factors loadings ranged from .695 to .827 and none of the item are removed because loading against each item is satisfactorily meets the minimum threshold

of 0.40 (Hair *et al.*, 1998). Factor II, “human oriented strategy” also consists of three items: (a) item (HOS1) “knowledge can be easily acquired from experts and co-workers” (b) item (HOS2) “Informal conversations and meetings used for knowledge sharing”(c) and item (HOS3) “knowledge is acquired by one-to-one mentoring”. The loadings items for factor II are ranged from .568 to .833 and none of the items are removed because loading against each item is satisfactorily meet the minimum threshold of 0.40 (Hair *et al.*, 1998). From the above analysis of factor loadings, it may be concluded that both the dimensions of knowledge management strategy have established the convergent validity.

Table 5.7: Factor Item Loadings for the Knowledge Management Strategy Scale

Items	Knowledge Management Strategy	Loadings
Factor I: System Oriented Strategy (3 items)		
SOS1		.695
SOS2		.827
SOS3		.782
Factor II: Human Oriented Strategy (3 items)		
HOS1		.568
HOS2		.833
HOS3		.716

5.4.5 Exploratory Factor Analysis for Knowledge Infrastructure Capability Scale

Table 5.6 exhibits the results of Principal Components Analyses (PCA) by applying varimax-rotation method with Kaiser Normalization to examine the construct validity for knowledge infrastructure capability. The number of factor originally extracted was based on scree plot and number of items with eigenvalues greater than 1. The knowledge infrastructure capability had four dimensions, “technology”, “decentralization”, “formalization” and “organizational culture”. Scree plot and eigenvalues suggest one factors solution for technology, decentralization, formalization and organizational culture. Further, eigenvalues are greater than 1 explaining 63.569% variance for technology, 59.424% variance for decentralization, 42.965% for formalization and 41.742% for organizational culture (See table # 5.5).

Factor I, “technology” consists of three items: (a) item (T1) “IT support for collaborative work regardless of time and place.” with a loading of .767; (b) item (T2) “IT technology support for searching and accessing necessary information” with a loading of .815 and (c) item (T3) “IT support for systematic storing” with a loading of .808. Thus loadings items for “technology” ranged from .767 to .815 and none of the item are removed because loading against each item is satisfactorily meet the minimum threshold of 0.40 (Hair *et al.*, 1998).

Factor II, “decentralization” consists of four items: (a) item (D1) “employees can take action without a supervisor” with a loading of .782; (b) item (D2) “employees do not need to refer to someone else to make decisions” with a loading of .782; (c) item (D3) “employees do not need to ask their supervisor before taking action” with a loading of .836; and (d) item (D4) “employees in our organization can make decisions without approval” with a loading of .675. So, all the factors loadings for “decentralization” ranged from .675 to .836 and none of the items are removed because loading against each item is satisfactorily meet the minimum threshold of 0.40 (Hair *et al.*, 1998).

Principal Component Analyses (PCA) with varimax rotation and Kaiser Normalization to evaluate the structure of formalization. The number of factor originally extracted was based on scree plot and eigenvalues criteria. Formalization has one factor solution. The eigenvalues are greater than 1 and depicts that 42.965% accumulated variance. Formalization has four items and used to evaluate the organization tendency towards written rules, procedures and documentation that were names as formalization: (a) item (F1) “activities that are covered by formal procedures” with a loading of .707; (b) item (F2) “Contact with our company is on a formal or planned basis” with a loading of .606; (c) item (F3) “rules and procedures are typically written” with a loading of .712; and (d) item (F4) “Employees cannot make their own rules on the job.” with a loading of .587. Hence all the loadings items for formalization meet the minimum threshold as suggested by (Hair *et al.*, 1998).

Factor III “organizational culture” has eight items: (a) item (OC1) “ employees are satisfied with the amount of collaboration” with a loading of 0.623; (b) item (OC2) “our employees are helpful” with loadings of 0.676; (c) item (OC3) “willingness to accept responsibility for failure” with a loading of 0.506; (d) item (OC4) “our employees are generally trustworthy” with a loading of 0.617; (e) item (OC5) “reciprocal faith in other members’ intentions and behaviors.” with a loading of .708; (f) item (OC6) “reciprocal faith in others’ commitment to organizational goals” with a loading of .735; (g) item (OC7) “reciprocal faith in other members ‘commitment to the company as a whole” with a loading of .718 and (h) item (OC8) “relationships based on reciprocal faith” with a loading of 0.548, Table 5.7 indicates that all the constructs of knowledge infrastructure capability satisfactorily meet the minimum threshold of 0.40 (Hair *et al.*, 1998) and thus confirms the existence of convergent validity.

Table 5.8: Factor Items Loadings for Knowledge Infrastructure Capability Scale

Items	Knowledge Infrastructure Capability	Loadings
Factor I Technology (3 Items)		
T1		.767
T2		.815
T3		.808
Factor II Decentralization (4 items)		
D1		.782
D2		.782
D3		.836
D4		.675
Factor II Formalization (4 items)		
F1		.707
F2		.606
F3		.712
F4		.587
Factor III Organizational Culture (8 items)		
OC1		.623
OC2		.676
OC3		.506

OC4	.617
OC5	.708
OC6	.735
OC7	.718
OC8	.548

5.4.6 Exploratory Factor Analysis for Knowledge Process Capability Scale

Table 5.8 exhibits the results of Principal Components Analyses (PCA) using varimax-rotation method with Kaiser Normalization to examine the construct validity for knowledge process capability. The number of factors originally extracted was based on scree plot and number of items with eigenvalues greater than 1. The knowledge process capability had four dimensions, “knowledge acquisition”, “knowledge protection”, “knowledge conversion” and “knowledge application”. Scree plot and eigenvalues suggested one factor solution for all the dimensions of knowledge process capability. Further, eigenvalues are greater than 1 explaining 47.774% variance for knowledge acquisition, 53.546% variance for knowledge protection, 58.068% for knowledge conversion and 50.597% for knowledge application. Six items are used to measure the knowledge acquisition: (a) item (KAC1) “generating new knowledge from existing knowledge” with a loading of 0.507; (b) item (KAC2) “processes for acquiring knowledge about new products and services” with a loading of .679; (c) item (KAC3) “processes for acquiring knowledge about competitors within our industry” with a loading of .752; (d) item (KAC4) “benchmarking performance among employees and departments.” with a loading of .727; (e) item (KAC5) “processes for identifying and upgrading best practices” with a loading .737 and (f) item (KAC6) “processes for replacing outdated knowledge with new knowledge” with a loading of .716. Thus all the items of knowledge acquisition satisfactorily meet the minimum threshold of 0.40 which confirm the existence of convergent validity (Hair *et al.*, 1998).

Table 5.7 presents the results of principal component analyses of knowledge protection using varimax rotation method with Kaiser Normalization. PCA extracted one factor solution for knowledge protection based on scree plot and eigenvalues suggestions.

Four items are constructed to evaluate the knowledge protection: (a) item (KP1) “password system, to restrict access to knowledge” with a loading of .619; item (KP2) “processes to protect embedded tacit knowledge” with a loading of .741; (c) item (KP3) “processes to identify restricted knowledge” with a loading of .792; (d) item (KP4) “communicate protection of knowledge on a corporate level” with a loading of .763. Thus all the items of knowledge acquisition satisfactorily meet the minimum threshold of 0.40 which confirms the existence of convergent validity (Hair *et al.*, 1998).

Knowledge conversion has five items which are loaded on same factor as expected. Factor loadings for five items ranged from .709 to .952 and none of the items are removed because all the items of knowledge conversion meet the criteria of minimum threshold of 0.40 (Hair *et al.*, 1998): (a) item (KC1) “processes for converting competitive intelligence into action plans” with a loading of .743; (b) item (KC2) “processes for filtering and evaluating knowledge” with a loading of .753; (c) item (KC3) “absorbing individual knowledge into organization knowledge” with a loading of .804; (d) item (KC4) “absorbing knowledge from partners into organizational knowledge” with a loading of .778 and (e) item (KC5) “integrating different sources and types of knowledge” with a loading .729.

Table 5.7 presents the results of principal component analyses using varimax rotation method with Kaiser Normalization and postulates that “knowledge application” extracted one factor solution based on eigenvalues and scree plot criteria. Six items are used to measure the knowledge application: (a) item (KAP1) “feedback from past experience to improve future projects” with a loading of .694; (b) item (KAP2) “processes for learning from past mistakes.” with a loading of .698; (c) item (KAP3) “matching sources of knowledge to problems and challenges” with a loading of .541; (d) item (KAP4) “applying stored knowledge to improve efficiency” with a loading .793; (e) item (KAP5) “applying knowledge to adjust strategic directions” with a loading of .755 and (f) item (KAP6) “Linking sources of knowledge e.g. holder and type available for problem solving” with a loading of .759. Thus all the items of knowledge application

satisfactorily meet the minimum threshold of 0.40 which confirms the existence of convergent validity (Hair *et al.*, 1998).

Table 5.9 Factor Items Loadings for Knowledge Process Capability Scale

Items	Knowledge Process Capability	Loadings
Factor I: Knowledge Acquisition (6 items)		
KAC1		.507
KAC2		.679
KAC3		.752
KAC4		.727
KAC5		.737
KAC6		.716
Factor II: Knowledge Protection (4 items)		
KP1		.619
KP2		.741
KP3		.792
KP4		.763
Factor III: Knowledge Conversion (5 items)		
KC1		.743
KC2		.753
KC3		.804
KC4		.778
KC5		.729
Factor IV: Knowledge Application (6 items)		
KAP1		.694
KAP2		.698
KAP3		.541
KAP4		.793
KAP5		.755
KAP6		.759

5.4.7 Exploratory Factor Analysis for Intellectual Capital Practices Scale

Table 5.8 exhibits the results of Principal Components Analyses (PCA) using varimax-rotation method with Kaiser Normalization to examine the construct validity for intellectual capital practices. Intellectual capital practices had three dimensions, “human capital”, “structural capital”, and “relational capital”. Scree plot and eigenvalues advise one factors solution for all the dimensions of intellectual capital practices. Further, eigenvalues are greater than 1 and explaining 56.141% accumulated variance for human capital practices, 57.066% variance for structural capital practices and 44.563% variance

for relational capital practices. Five items are used to measure the human capital: (a) item (HC1) “work experience for accomplishing their job successfully” with a loading of 0.748; (b) item (HC2) “professional skills in their particular jobs and functions” with a loading of .819; (c) item (HC3) “develop new ideas and knowledge” with a loading of .647; (d) item (HC4) “employees are creative in our company” with a loading of .773. Thus all the items of human capital satisfactorily meet the minimum threshold of 0.40 which confirm the existence of convergent validity (Hair *et al.*, 1998).

Six items are used to measure the structural capital: (a) item (SC1) “operations and procedures of our company are very efficient” with a loading of 0.730; (b) item (SC2) “Our organization responds to changes very quickly” with a loading of .734; (c) item (SC3) “easily accessible information system” with a loading of .672; (d) item (SC4) “culture and atmosphere are flexible and comfortable” with a loading of .737; (e) item (SC5) “emphasizes new market development investment” with a loading .781 and (f) item (SC6) “supportive different departments in our company” with a loading of .799. Thus all the items of structural capital satisfactorily meet the minimum threshold of 0.40 which confirm the existence of convergent validity (Hair *et al.*, 1998).

Five items are used to measure the relational capital: (a) item (RC1) “solves problems through effective collaboration” with a loading of 0.692; (b) item (RC2) “maintain long term relationships with customers” with a loading of .802; (c) item (RC3) “stable and good relationships with the strategic partners” with a loading of .767; (d) item (RC4) “stable and good relationships with the strategic partners” with a loading of .757. Thus all the items of relational capital satisfactorily meet the minimum threshold of 0.40 which confirm the existence of convergent validity (Hair *et al.*, 1998).

Table 5.10 Factor Items Loadings for Intellectual Capital Practices Scale

Items	Intellectual Capital Practices	Loadings
Factor I: Human Capital Practices (4 items)		
HC1		.748
HC2		.819
HC3		.647
HC4		.773
Factor II: Structural Capital Practices (6 items)		
SC1		.730
SC2		.734
SC3		.672
SC4		.737
SC5		.781
SC6		.799
Factor III: Relational Capital Practices (4 items)		
RC1		.692
RC2		.802
RC3		.767
RC4		.757

5.4.8 Exploratory Factor Analysis for Overall Performance Scale

Table 5.10 demonstrates the results of Principal Components Analyses (PCA) using varimax-rotation method with Kaiser Normalization to examine the construct validity for overall performance of banks. The number of factor originally extracted was based on scree plot and number of items with eigenvalues greater than 1. Overall performance of banks decomposed into four dimensions, “operational excellence”, “customer intimacy”, “product leadership” and financial achievements. Scree plot and eigenvalues suggests one solution for the overall performance thus explaining 44.563% accumulated variance.

Above discussion indicates four dimensions and eleven items are used to measure the overall performance of banks (i.e. three items for operational excellence, two items for customer intimacy, two items for product leadership and four items for financial

achievements): (a) item (OE1) “performs well in improving efficiency of products” with a loading of 0.706; (b) item (OE2) “performs well in improving dependability of delivery processes” with a loading of .646; (c) item (OE3) “performs well in cost management than that of key competitors” with a loading of .709; (d) item (CI1) “performs well in improving customer satisfaction” with a loading of .754; (e) item (CI2) “performs well in improving quality of customers’ service” with a loading .654; (f) item (PL1) “my organization performs well in improving quality of products” with a loading of .657; (g) item (PL2) “performs well in improving functionality of products” with a loading of .699; (h) item (FE1) “my organization performs well in improving revenue growth.” with a loading of .724; (h) item (FE2) “my organization performs well in improving profit margins.” with a loading of .681; (i) item (FE3) “better Return on investment than that of key competitors” with a loading of .539; and (j) item (FE4) “my organization performs well in improving revenue growth” with a loading of .539. Thus all the items of overall performance satisfactorily meet the minimum threshold of 0.40 which confirm the existence of convergent validity (Hair *et al.*, 1998).

Table 5.11 Factor Items Loadings for Overall Performance Scale

Items	Overall Performance	Loadings
OE1		.706
OE2		.646
OE3		.709
CI1		.754
CI2		.654
PL1		.657
PL2		.699
FE1		.724
FE2		.681
FE3		.539

5.6 Regression Analysis

Regression analysis is used to test the impact of knowledge sharing practices (i.e. explicit knowledge sharing practices and tacit knowledge sharing practices) on mediating variables (i.e. knowledge management strategy, knowledge infrastructure capability, knowledge process capability and intellectual capital practices) and mediating variables on overall performance of banks which is the combination of operational excellency, customer intimacy, product leadership and financial achievements. Figure 5.1 exhibits the results of simple regression of proposed model. It reveals that both explicit and tacit knowledge sharing practices have positive ($\beta=.125$; $\beta=.542$) and significant ($p<0.001$) effect on system oriented strategy which also designates that system oriented strategy captures the more effect from tacit knowledge sharing practices as compare to explicit knowledge sharing practices, thus supporting hypotheses H1a and H2a. The explicit knowledge sharing practices have weak positive ($\beta=.071$; $p<0.01$) but statistically significant relationship with human oriented strategy as compare to tacit knowledge sharing practices ($\beta=.452$; $p<0.01$), thus supporting the hypotheses H1b and H2b.

The explicit KS practices have positive ($\beta=.128$) and significant relationship ($p<0.001$) with technology, however, tacit KS practices demonstrates strong positive ($\beta=.522$) and significant relationship with technology relatively to explicit KS practices, thus validating the hypotheses H1c and H2c. Decentralization has negative ($\beta= -.024$) relationship with explicit KS practices and positive relationship ($\beta=.033$) with tacit KS practices and both are insignificant ($p>0.10$) related with decentralization, thus hypotheses H1d and H2d are not supported in this case. The explicit and tacit KS practices have positive ($\beta=.115$; $\beta=.266$) and statistical significant ($p<0.001$) effects on formalization, this also suggests that tacit KS practices relatively captures more effect from tacit KS practices rather explicit KS practices, thus supports the hypotheses H1e and H2e. The effects of explicit and tacit KS practices on formalization are ($\beta=.115$) and ($\beta=.266$) which are statistically significant which indicates that formalization captures the more effect from tacit knowledge sharing practices as compare to explicit KS practices

thus supporting the hypotheses of H1e and H2e. The effects of both explicit and tacit KS practices on organizational culture are ($\beta=.099$) and ($\beta=.602$) respectively are also statistically significant ($p<0.001$) which postulates that tacit KS practices have more potential relationship with organizational culture compare to explicit KS practices hence, this typical relationship also supports the hypotheses H1f and H2f.

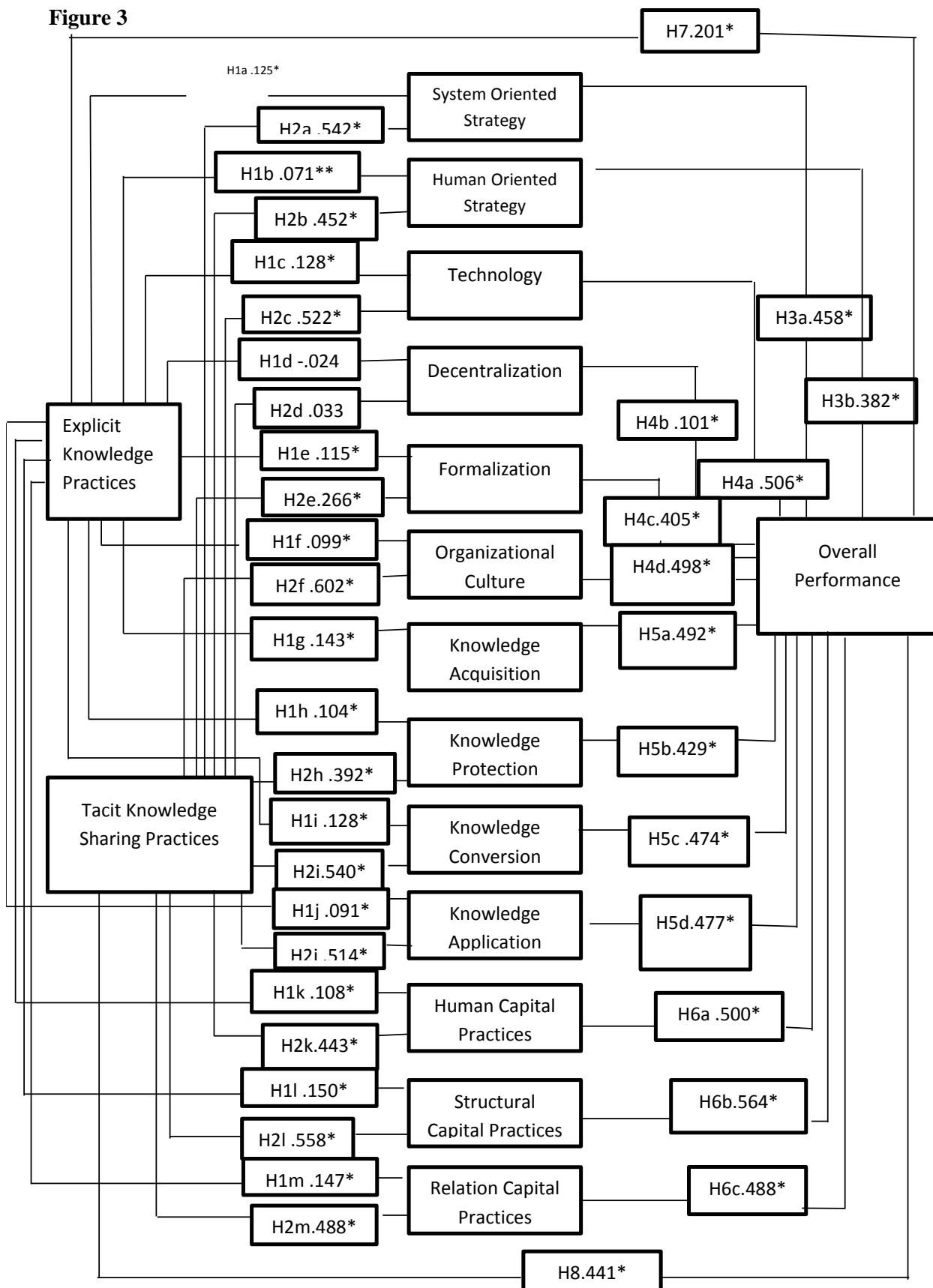
Four constructs are used to measure the knowledge process capability i.e. knowledge acquisition, knowledge protection, knowledge conversion and knowledge application. The hypotheses H1g and H2g relating to impact of explicit and tacit KS practices on knowledge acquisition are also supported because both explicit and tacit KS practices have positive ($\beta=.143$; $\beta=.518$) and statistically significant ($p<0.001$) relationship with knowledge acquisition, which also indicates that tacit KS practices receive more effect from tacit KS practices relatively to explicit KS practices. However, hypotheses H1h, H2h, H1i, H2i, H1j and H2j relating to impact of explicit and tacit KS practices on knowledge protection, knowledge conversion and knowledge application are also supported because both explicit and tacit KS practices have positive ($\beta=.104$; $\beta=.392$; $\beta=.128$; $\beta=.540$ $\beta=.091$; $\beta=.514$) and statistically significant ($p<0.001$) relationship with knowledge protection, conversion and application.

Similarly, three constructs are used to measure the intellectual capital i.e. human capital practices, structural capital practices and relational capital practices. hypotheses H1k, H2k, H1l, H2l, H1m and H2m relating to impact of explicit and tacit KS practices on human, structural and relational capital practices are also supported because both explicit and tacit KS practices have positive ($\beta=.108$; $\beta=.443$; $\beta=.150$; $\beta=.558$; $\beta=.147$; $\beta=.488$) and statistically significant ($p<0.001$) relationship with human, structural and relational capital practices.

Likewise, all the mediating variables have positive and significant effects on overall performance of banks: system oriented strategy ($\beta=.458$; $p<0.001$), human oriented strategy ($\beta=.382$; $p<0.001$), technology ($\beta=.506$; $p<0.001$), decentralization ($\beta=.101$; $p<0.01$), formalization ($\beta=.405$; $p<0.001$), organizational culture ($\beta=.498$;

$p < 0.001$), knowledge acquisition ($\beta = .492$; $p < 0.001$), knowledge protection ($\beta = .429$; $p < 0.001$), knowledge conversion ($\beta = .474$; $p < 0.001$), knowledge application ($\beta = .477$; $p < 0.001$), human capital practices ($\beta = .500$; $p < 0.001$), structural capital practices ($\beta = .564$; $p < 0.001$) and relational capital practices ($\beta = .488$; $p < 0.001$). Thus providing the support for hypotheses H3a, H3b, H4a, H4b, H4c, H4d, H5a, H5b, H5c, H5d, H6a, H6b, H6c and H6d. Figure 3 also exhibits the impact of explicit and tacit practices on overall performance of banks which is positive and statistically significant, thus supporting the hypotheses H7 and H8.

Figure 3



5.7 Mediation Analysis

For analyzing the mediation analysis, the direct effect of independent variable (i.e. explicit and tacit knowledge sharing practices) on dependent variable (overall performance of banks) and indirect effect of independent variables (i.e. explicit and tacit knowledge sharing practices) on dependent variable (overall performance) through mediating variables (i.e. system oriented strategy, human oriented strategy, technology, decentralization, formalization, organizational culture, knowledge acquisition, knowledge protection, knowledge conversion and knowledge application, human capital practices, structural capital practices and relational capital practices) are examined using AMOS graphic. For considering mediation, the direct effects of independent variables (both explicit and tacit knowledge sharing practices) on dependent variable (overall performance of banks) should be significant to test the mediation (Baron and Kenny 1986). Table 5.11 presents the direct effect of independent variables (i.e. explicit and tacit knowledge sharing practices) on dependent variable (overall performance of banks), which is statistically significant at ($p < 0.001$) thus confirms the first assumption of mediation. When the mediator variable enters in the model and direct effect reduces then we may say that some of the effect shifted through the mediator variable. If the direct effect reduces but still remains significant then there is partial mediation (see equation A) while if direct effect reduces but does not remain significant then there is full or complete mediation (see equation B).

Partial mediation= Direct effect reduces +Significant----- (A)

Full mediation= Direct effect reduces + Insignificant----- (B)

Tab1 5.12 Direct Effect (Before Mediating Variables)

Variables	Beta Estimate	S.E	C.R	P-value	Result
EKSP-->OP	0.175	0.034	5.143	0.000	significant
TKSP-->OP	0.641	0.064	9.974	0.000	significant

5.7.1 Indirect Effect of Explicit Knowledge Sharing Practices on Banks' Performance through System Oriented Strategy

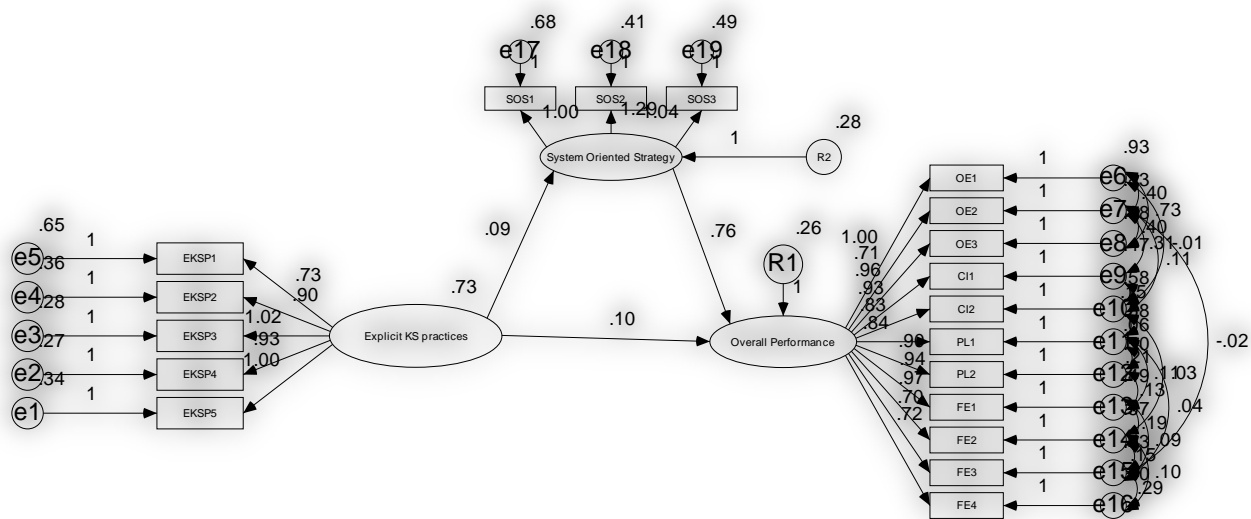
Table 5.12 presents the indirect effect of explicit knowledge sharing practices on overall performance of banks using system oriented strategy as mediator. This shows that while testing the mediating role of system oriented strategy, the effect of explicit knowledge sharing practices on overall performance of banks reduced from ($\beta=0.175$ to $\beta=0.104$) but it still remain significant ($p<0.001$) thus suggests that system oriented strategy partially mediates the relationship between explicit knowledge sharing practices and overall performance of banks.

Table 5.13 Indirect Effect of Explicit Knowledge Sharing Practices through System Oriented Strategy

Variables	Beta Estimate	S.E	C.R	P-value	Result
EKSP-->OP	0.104	0.030	3.438	0.000	Significant
EKSP-->SOS	0.094	0.028	3.309	0.000	Significant
SOS-->OP	0.756	0.084	8.973	0.000	Significant

After testing the mediating model, study has assessed structural model to estimate the measurement model (Figure 5.2) using various fit indices.

Figure 5.2 Proposed Structural Model-A



5.7.2 Indirect Effect of Explicit Knowledge Sharing Practices on Banks' Performance through Human Oriented Strategy

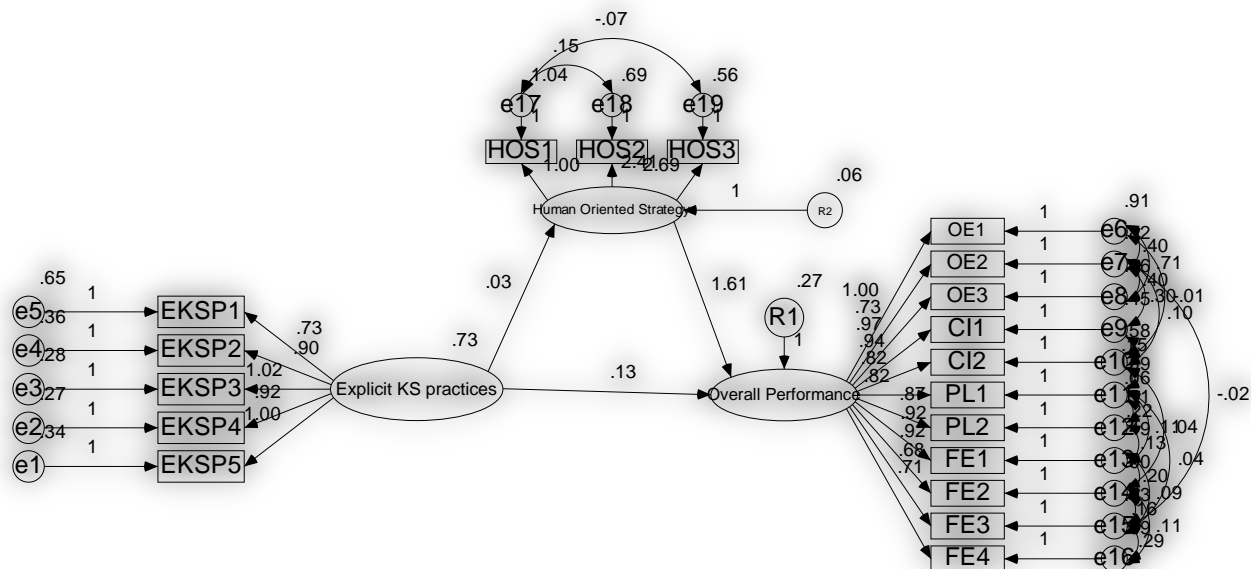
Table 5.15 presents the indirect effect of explicit knowledge sharing practices on overall performance of banks using human oriented strategy as a mediator. This shows that while testing the mediating role of human oriented strategy, the effect of explicit knowledge sharing practices on overall performance of banks reduced from ($\beta=0.175$ to $\beta=0.123$) and still remain significant ($p<0.01$) thus suggests that human oriented strategy partially mediates the relationship between explicit knowledge sharing practices and overall performance of banks.

Table 5.15 Indirect Effect of Explicit Knowledge Sharing Practices through Human Oriented Strategy

Variables	Beta Estimate	S.E	C.R	P-value	Result
EKSP-->OP	0.123	0.032	3.859	0.000	significant
EKSP-->HOS	0.042	0.018	2.268	0.023	significant at 5%
HOS-->OP	1.232	0.215	5.753	0.000	significant

Table 5.16 and figure 5.3 indicate the results of fit indices through structural model to estimate the measurement model (Figure 5.2) using various fit indices.

Figure 5.3 Proposed Structural Model-B



5.7.3 Indirect Effect of Explicit Knowledge Sharing Practices on Banks’ Performance through Technology as a Mediator

Table 5.17 presents the indirect effect of explicit knowledge sharing practices on overall performance of banks using technology as a mediator. This shows that while testing the mediating role of technology, the effect of explicit knowledge sharing practices on overall performance of banks reduced from ($\beta=0.175$ to $\beta=0.092$) and still remain significant ($p<0.01$) thus suggests that technology partially mediates the relationship between explicit knowledge sharing practices and overall performance of banks.

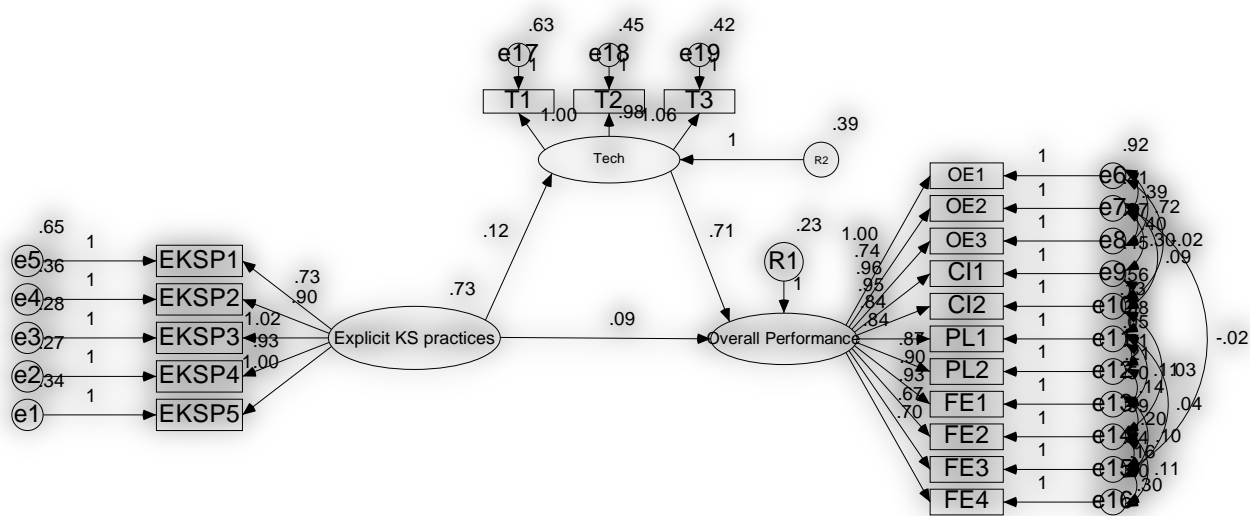
Table 5.17 Indirect Effect of Explicit Knowledge Sharing Practices through Technology

Variables	Beta Estimate	S.E	C.R	P-value	Result
-----------	---------------	-----	-----	---------	--------

EKSP-->OP	0.092	0.030	3.106	0.000	Significant
EKSP-->T	0.116	0.032	3.590	0.001	Significant
T-->OP	0.706	0.069	10.293	0.000	Significant

Table 5.18 and figure 5.4 exhibit the results of fit indices through structural model to estimate the measurement model (Figure 5.2) using various fit indices.

Figure 5.4 Proposed Structural Model-C



5.7.4 Indirect Effect of Explicit Knowledge Sharing Practices on Banks’ Performance using Formalization as a Mediator

Table 5.19 presents the indirect effect of explicit knowledge sharing practices on overall performance of banks using formalization as a mediator. This shows that while testing the mediating role of formalization, the effect of explicit knowledge sharing practices on overall performance of banks reduced from ($\beta=0.175$ to $\beta=0.088$) and still

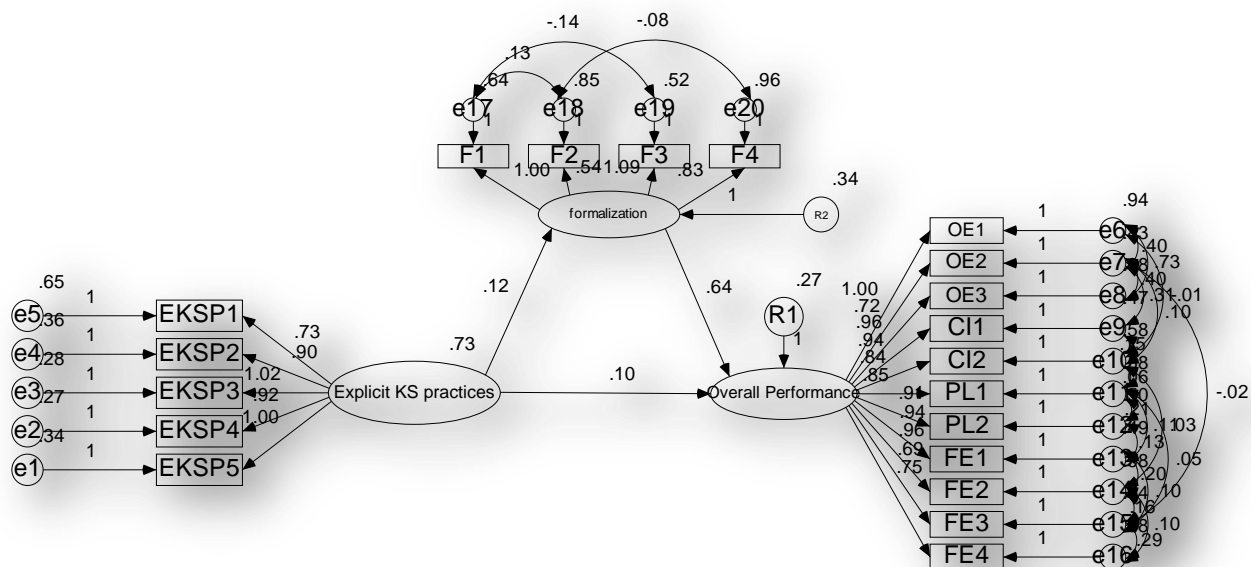
remain significant ($p < 0.01$) thus suggests that formalization partially mediates the relationship between explicit knowledge sharing practices and overall performance of banks.

Table 5.19 Indirect effect of explicit knowledge sharing practices through formalization

Variables	Beta Estimate	S.E	C.R	P-value	Result
EKSP-->OP	0.088	0.032	2.797	0.005	significant
EKSP-->F	0.117	0.033	3.575	0.000	significant
F-->OP	0.719	0.088	8.153	0.000	significant

Table 5.20 and figure 5.5 uncover the results of fit indices through structural model to estimate the measurement model using various fit indices.

Figure 5.5 Proposed Structural Model-D



5.7.5 Indirect Effect of Explicit Knowledge Sharing Practices on Banks' Performance using Organizational Culture as a Mediator

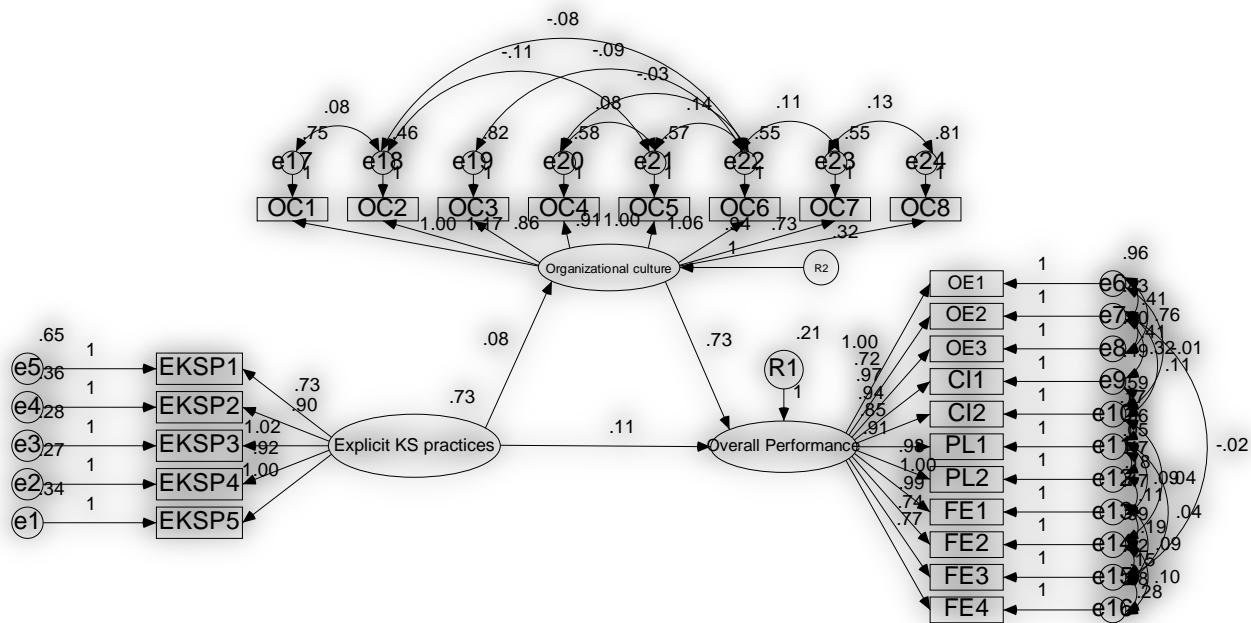
Table 5.21 presents the indirect effect of explicit knowledge sharing practices on overall performance of banks using organizational culture as a mediator. This shows that while testing the mediating role of organizational culture, the effect of explicit knowledge sharing practices on overall performance of banks reduced from ($\beta=0.175$ to $\beta=0.115$) which still remain significant ($p<0.01$) thus suggests that organizational culture partially mediates the relationship between explicit knowledge sharing practices and overall performance of banks.

Table 5.21 Indirect Effect of Explicit Knowledge Sharing Practices through Organizational Culture

Variables	Beta Estimate	S.E	C.R	P-value	Result
EKSP-->OP	0.115	0.028	4.085	0.000	significant
EKSP-->OC	0.084	0.028	2.0950	0.003	significant
OC-->OP	0.675	0.068	9.897	0.000	significant

Table 5.21 and figure 5.6 reveal the results of fit indices through structural model to estimate the measurement model using various fit indices.

Figure 5.6 Proposed Structural Model-E



5.7.6 Indirect Effect of Explicit Knowledge Sharing Practices on Banks' Performance using Knowledge Acquisition as a Mediator

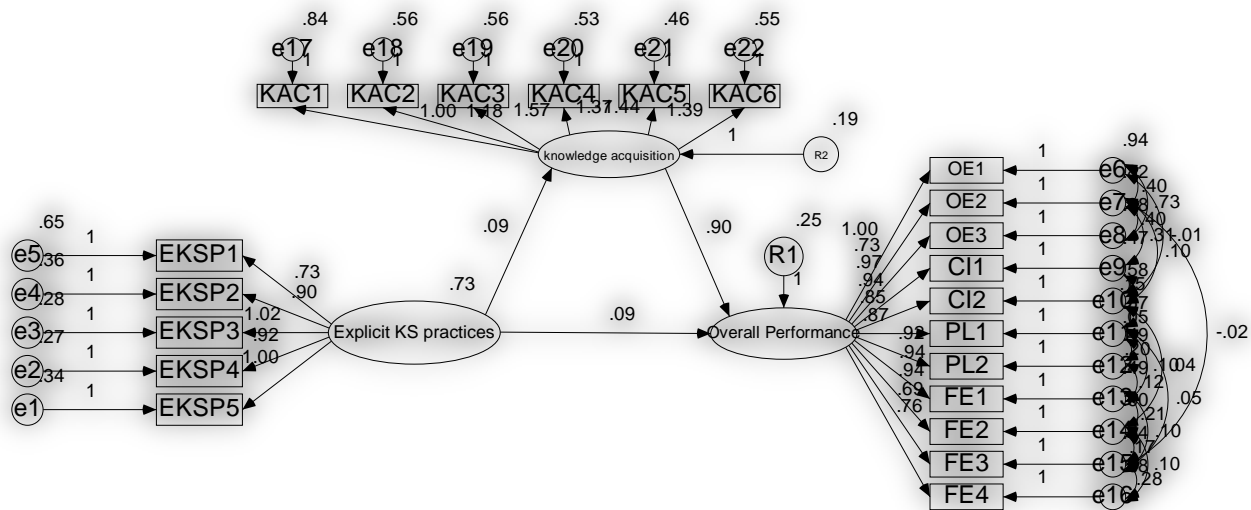
Table 5.23 presents the indirect effect of explicit knowledge sharing practices on overall performance of banks using knowledge acquisition as a mediator. This shows that while testing the mediating role of organizational culture, the effect of explicit knowledge sharing practices on overall performance of banks reduced from ($\beta=0.175$ to $\beta=0.089$) which still remain significant ($p<0.01$) thus suggests that knowledge acquisition partially mediates the relationship between explicit knowledge sharing practices and overall performance of banks.

Table 5.23 Indirect Effect of Explicit Knowledge Sharing Practices through Knowledge Acquisition

Variables	Beta Estimate	S.E	C.R	P-value	Result
EKSP-->OP	0.089	0.029	3.089	0.002	significant
EKSP-->KAC	0.092	0.023	4.070	0.000	significant
KAC-->OP	0.899	0.105	8.531	0.000	significant

Table 5.24 and figure 5.7 reveals the results of fit indices through structural model to estimate the measurement model using various fit indices.

Figure 5.7 Proposed Structural Model-F



5.7.7 Indirect Effect of Explicit Knowledge Sharing Practices on Banks' Performance using Knowledge Protection as a Mediator

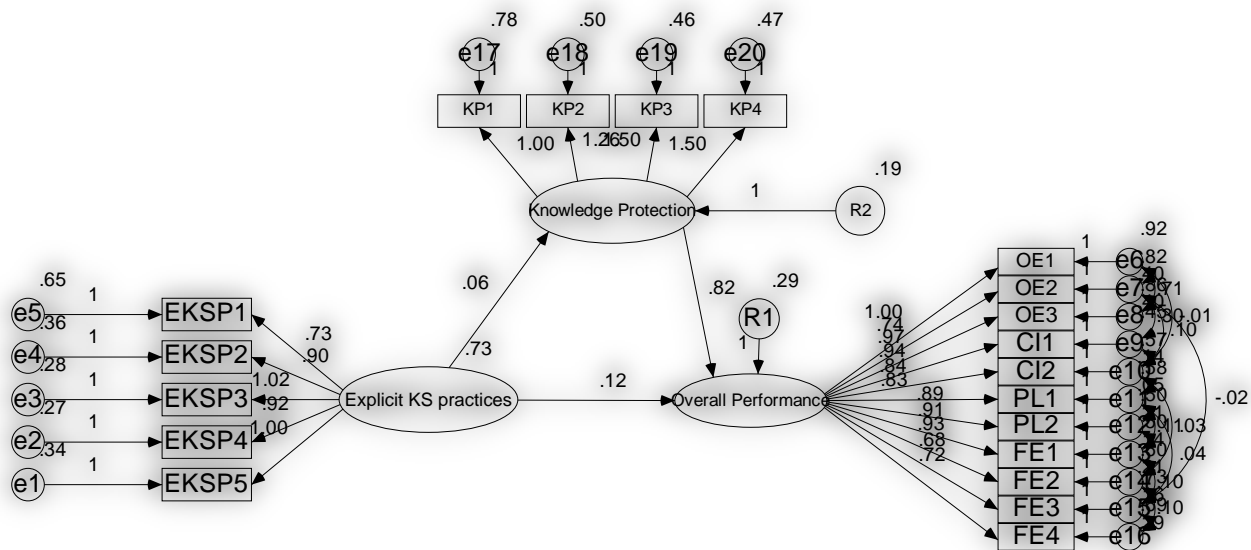
Table 5.25 presents the indirect effect of explicit knowledge sharing practices on overall performance of banks using knowledge protection as a mediator. This shows that while testing the mediating role of organizational culture, the effect of explicit knowledge sharing practices on overall performance of banks reduced from $\beta=0.175$ to $\beta=0.121$ which still remain significant ($p<0.01$) thus suggests that knowledge protection partially mediates the relationship between explicit knowledge sharing practices and overall performance of banks.

Table 5.25 Indirect effect of Explicit Knowledge Sharing Practices through Knowledge Protection

Variables	Beta Estimate	S.E	C.R	P-value	Result
EKSP-->OP	0.121	0.031	3.967	0.000	Significant
EKSP-->KP	0.064	0.023	2.815	0.005	Significant
KP-->OP	0.820	0.102	8.050	0.000	significant

Table 5.23 and figure 5.6 reveals the results of fit indices through structural model to estimate the measurement model using various fit indices. The study has assessed the fitness of the structural model through estimating (1) absolute fit measures: $X^2/df=3.518$, GFI=0.933, RMSEA=0.056, (2) Incremental fit measures: NFI=0.926, AGFI=0.909, CFI=.945 and (3) Parsimonious fit measures: PGFI=0.690, PNFI=0.749. Table 5.25 presents the overall fit indices of the structural model with scores and recommended cut-off values, suggesting that all values satisfactory meet the levels of fit indices, thus confirms that model is fit and hence suitable for testing the proposed hypotheses as discussed above.

Figure 5.8 Proposed Structural Model-G



5.7.8 Indirect Effect of Explicit Knowledge Sharing Practices on Banks' Performance using Knowledge Conversion as a Mediator

Table 5.27 presents the indirect effect of explicit knowledge sharing practices on overall performance of banks using knowledge conversion as a mediator. This shows that while testing the mediating role of knowledge conversion, the effect of explicit knowledge sharing practices on overall performance of banks reduced from ($\beta=0.175$ to $\beta=0.104$) which still remain significant ($p<0.01$) thus suggests that knowledge conversion partially mediates the relationship between explicit knowledge sharing practices and overall performance of banks.

Table 5.27 Indirect Effect of Explicit Knowledge Sharing Practices through Knowledge Conversion

Variables	Beta Estimate	S.E	C.R	P-value	Result
EKSP-->OP	0.104	0.030	3.493	0.000	significant
EKSP-->KC	0.130	0.034	3.794	0.000	significant
KC-->OP	0.545	0.052	10.503	0.000	significant

Table 5.27 and figure 5.8 reveals the results of fit indices through structural model to estimate the measurement model using various fit indices.

5.7.9 Indirect Effect of Explicit Knowledge Sharing Practices on Banks' Performance using Knowledge Application as a Mediator

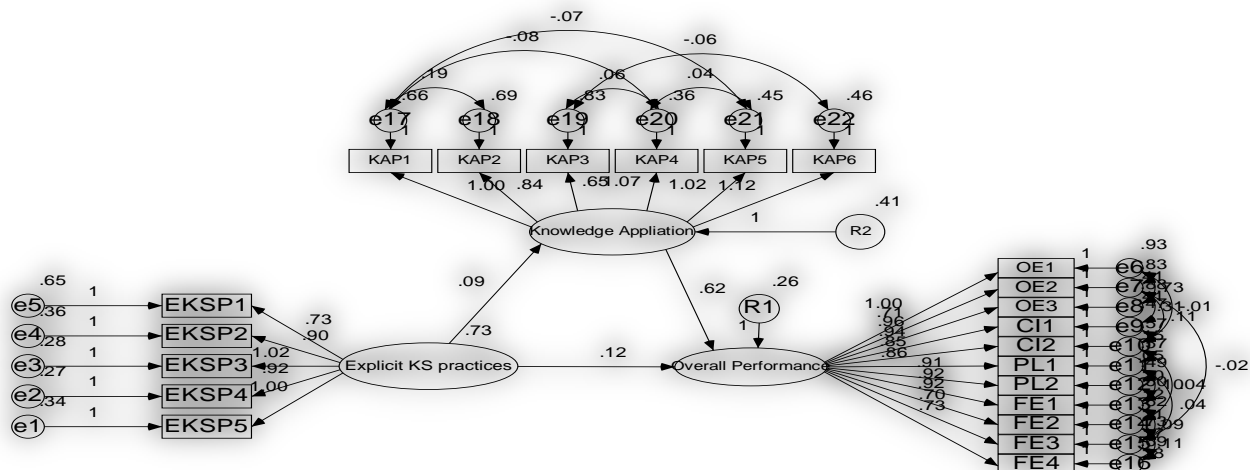
Table 5.29 presents the indirect effect of explicit knowledge sharing practices on overall performance of banks using knowledge application as a mediator. This shows that while testing the mediating role of knowledge application, the effect of explicit knowledge sharing practices on overall performance of banks reduced from ($\beta=0.175$ to $\beta=0.118$) which still remain significant ($p<0.01$) thus suggests that knowledge application partially mediates the relationship between explicit knowledge sharing practices and overall performance of banks.

Table 5.29 Indirect Effect of Explicit Knowledge Sharing Practices through Knowledge Application

Variables	Beta Estimate	S.E	C.R	P-value	Result
EKSP-->OP	0.118	0.029	4.078	0.000	significant
EKSP-->KAP	0.084	0.030	2.797	0.005	significant
KAP-->OP	0.639	0.062	10.261	0.000	significant

Table 5.30 and figure 5.10 reveal the results of fit indices through structural model to estimate the measurement model using various fit indices. The study has assessed the fitness of the structural model through estimating (1) absolute fit measures: $X^2/df = 3.442$, GFI=0.935, RMSEA=0.055, (2) Incremental fit measures: NFI=0.932, AGFI=0.909, CFI=.950 and (3) Parsimonious fit measures: PGFI=0.669, PNFI=0.730. Table 5.29 presents the overall fit indices of the structural model with scores and recommended cut-off values, suggesting that all values satisfactory meet the levels of fit indices, thus confirms that model is fit and hence suitable for testing the proposed hypotheses as discussed above.

Figure 5.10 Proposed Structural Model-I



5.7.10 Indirect Effect of Explicit Knowledge Sharing Practices on Banks’ Performance using Human Capital Practices as a Mediator

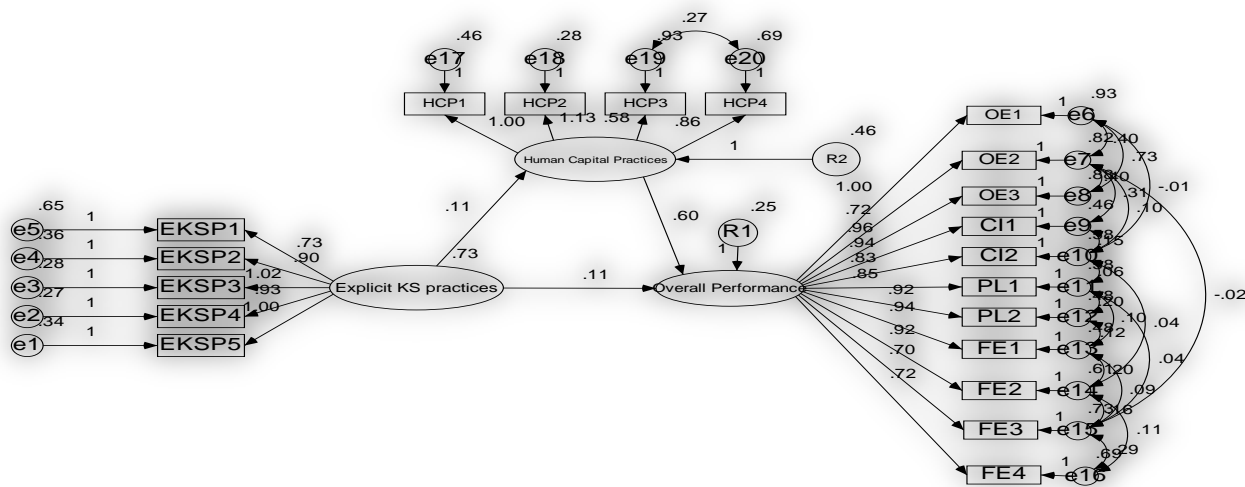
Table 5.31 presents the indirect effect of explicit knowledge sharing practices on overall performance of banks using human capital practices as a mediator. This shows that while testing the mediating role of knowledge application, the effect of explicit knowledge sharing practices on overall performance of banks reduced from ($\beta=0.175$ to $\beta=0.108$) which still remain significant ($p<0.01$) thus indicating that human capital practices partially mediates the relationship between explicit knowledge sharing practices and overall performance of banks.

Table 5.31 Indirect Effect of Explicit Knowledge Sharing Practices through Human Capital Practices

Variables	Beta Estimate	S.E	C.R	P-value	Result
EKSP-->OP	0.104	0.029	3.627	0.000	Significant
EKSP-->HCP	0.108	0.033	3.317	0.000	Significant
HCP-->OP	0.635	0.059	10.843	0.000	Significant

Table 5.32 and figure 5.11 reveal the results of fit indices through structural model to estimate the measurement model using various fit indices.

Figure 5.11 Proposed Structural Model-J



5.7.11 Indirect Effect of Explicit Knowledge Sharing Practices on Banks’ Performance using Rational Capital Practices as a Mediator

Table 5.33 presents the indirect effect of explicit knowledge sharing practices on overall performance of banks using structural capital practices as a mediator. This shows that while testing the mediating role of knowledge application, the effect of explicit knowledge sharing practices on overall performance of banks reduced from ($\beta=0.175$ to $\beta=0.076$) which still remain significant ($p<0.01$) thus suggests that structural capital practices partially mediates the relationship between explicit knowledge sharing practices and overall performance of banks.

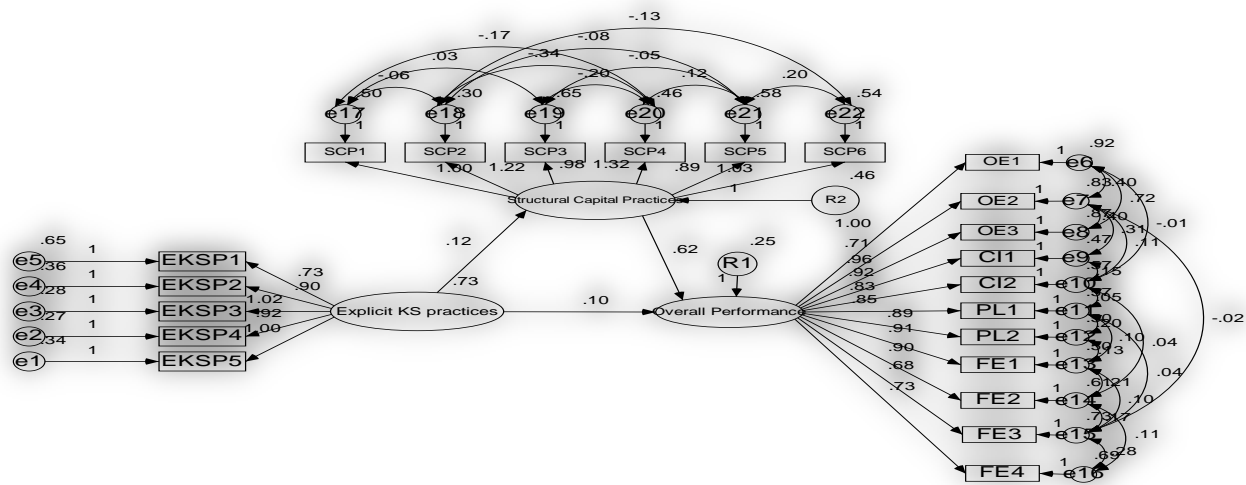
Table 5.33 Indirect Effect of Explicit Knowledge Sharing Practices through Structural Capital Practices

Variables	Beta Estimate	S.E	C.R	P-value	Result
EKSP-->OP	0.076	0.028	2.751	0.006	significant
EKSP--	0.134	0.030	4.457	0.000	significant

>SCP					
SCP-->OP	0.722	0.063	11.473	0.000	significant

Table 5.34 and figure 5.12 reveal the results of fit indices through structural model to estimate the measurement model using various fit indices.

Figure 5.12 Proposed Structural Model-K



5.7.12 Indirect Effect of Explicit Knowledge Sharing Practices on Banks' Performance using Relational Capital Practices as a Mediator

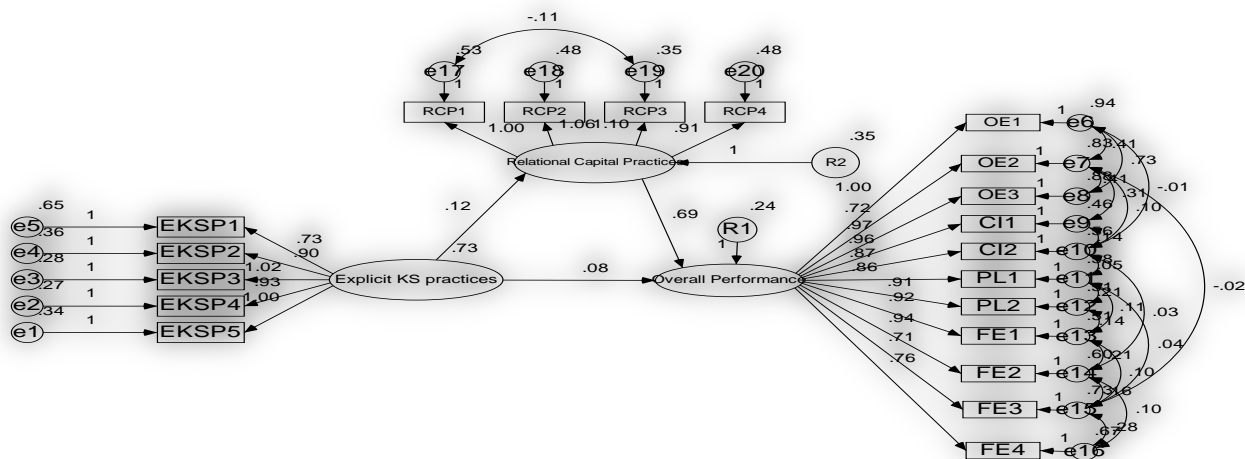
Table 5.35 presents the indirect effect of explicit knowledge sharing practices on overall performance of banks using relational capital practices as a mediator. This shows that while testing the mediating role of relational capital practices, the effect of explicit knowledge sharing practices on overall performance of banks reduced from ($\beta=0.175$ to $\beta=0.082$) which still remain significant ($p<0.01$) thus suggests that relational capital practices partially mediates the relationship between explicit knowledge sharing practices and overall performance of banks.

Table 5.35 Indirect Effect of Explicit Knowledge Sharing Practices through Relational capital Practices

Variables	Beta Estimate	S.E	C.R	P-value	Result
EKSP-->OP	0.082	0.029	2.840	0.005	significant
EKSP-->RCP	0.115	0.028	4.149	0.000	significant
RCP-->OP	0.758	0.077	9.868	0.000	significant

Table 5.36 and figure 5.13 reveal the results of fit indices through structural model to estimate the measurement model using various fit indices.

Figure 5.13 Proposed Structural Model-L



5.7.13 Indirect Effect of Tacit Knowledge Sharing Practices on Banks’ Performance using System Oriented Strategy as a Mediator

Table 5.37 presents the indirect effect of tacit knowledge sharing practices on overall performance of banks using system oriented strategy as a mediator. This shows that while testing the mediating role of system oriented strategy, the effect of tacit knowledge sharing practices on overall performance of banks reduced from ($\beta=0.641$ to $\beta= 0.143$) which does not remain significant ($p>0.01$) thus suggests that system oriented strategy completely mediates the relationship between tacit knowledge sharing practices and overall performance of banks.

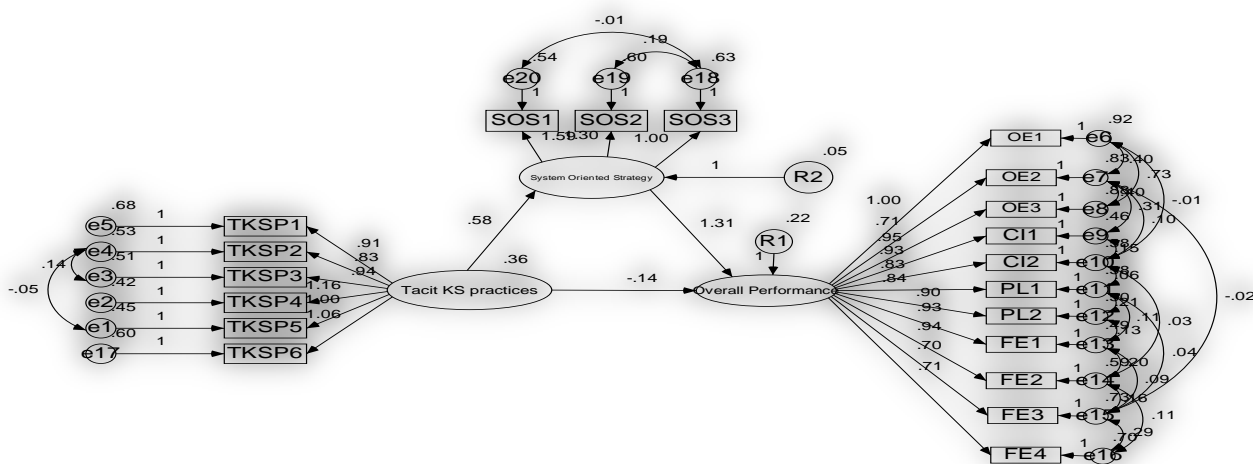
Table 5.37 Indirect Effect of Tacit Knowledge Sharing Practices through System Oriented Strategy

Variables	Beta Estimate	S.E	C.R	P-value	Result
TKSP-->OP	0.143	0.099	1.451	0.147	Insignificant
TKSP-->SOS	0.645	0.057	11.339	0.000	Significant

SOS-->OP	0.759	0.139	5.469	0.000	Significant
----------	-------	-------	-------	-------	-------------

Table 5.38 and figure 5.14 reveals the results of fit indices through structural model to estimate the measurement model using various fit indices.

Figure 5.14 Proposed Structural Model-L



5.7.14 Indirect Effect of Tacit Knowledge Sharing Practices on Banks’ Performance using Human Oriented Strategy as a Mediator

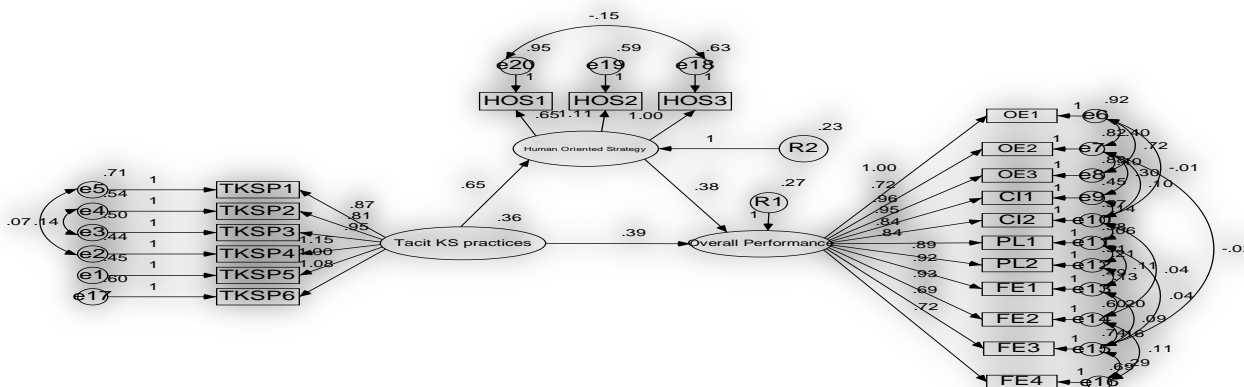
Table 5.39 presents the indirect effect of tacit knowledge sharing practices on overall performance of banks using human oriented strategy as a mediator. This shows that while testing the mediating role of human oriented strategy, the effect of tacit knowledge sharing practices on overall performance of banks reduced from ($\beta=0.641$ to $\beta= 0.355$) which remain significant ($p<0.01$) thus suggests that human oriented strategy partially mediates the relationship between tacit knowledge sharing practices and overall performance of banks.

Table 5.39 Indirect Effect of Tacit Knowledge Sharing Practices on Banks’ Performance using Human Oriented Strategy as a Mediator

Variables	Beta Estimate	S.E	C.R	P-value	Result
TKSP-->OP	0.355	0.078	4.531	0.000	significant
TKSP-->HOS	0.633	0.065	9.740	0.000	significant
HOS-->OP	0.445	0.092	4.829	0.000	significant

Table 5.40 and figure 5.15 reveals the results of fit indices through structural model to estimate the measurement model using various fit indices.

Figure 5.15 Proposed Structural Model-M



5.7.16. Indirect Effect of Tacit Knowledge Sharing Practices on Banks’ Performance using Technology as a Mediator

Table 5.41 presents the indirect effect of tacit knowledge sharing practices on overall performance of banks using technology as a mediator. This shows that while testing the mediating role of technology, the effect of tacit knowledge sharing practices on overall performance of banks reduced from ($\beta=0.641$ to $\beta= 0.201$) and which remain

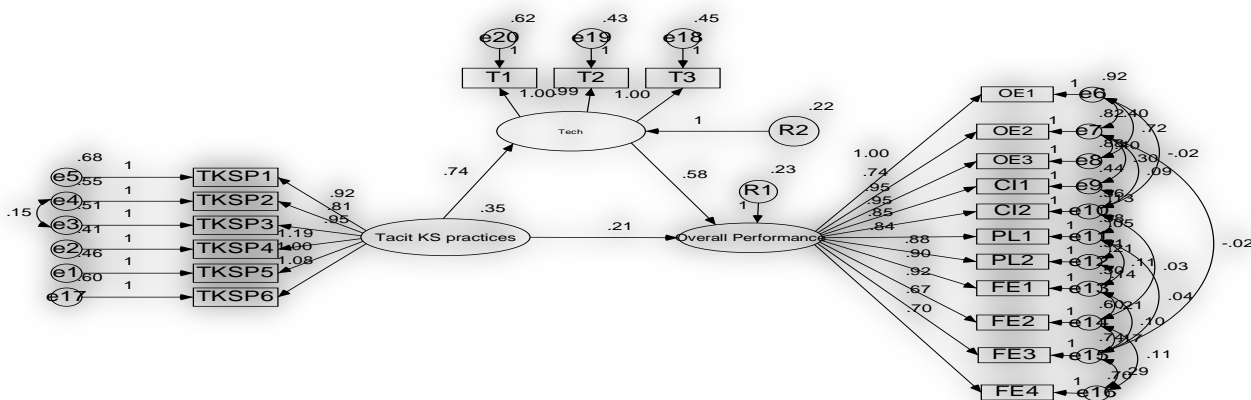
significant ($p < 0.01$) thus suggests that technology partially mediates the relationship between tacit knowledge sharing practices and overall performance of banks.

Table 5.41 Indirect Effect of Tacit Knowledge Sharing Practices on Banks' Performance using Technology as a Mediator

Variables	Beta Estimate	S.E	C.R	P-value	Result
TKSP-->OP	0.201	0.073	2.752	0.006	significant
TKSP-->Technology	0.747	0.061	12.292	0.000	significant
Technology-->OP	0.583	0.080	7.311	0.000	Significant

Table 5.42 and figure 5.16 reveal the results of fit indices through structural model to estimate the measurement model using various fit indices.

Figure 5.16 Proposed Structural Model-N



5.7.16 Indirect Effect of Tacit Knowledge Sharing Practices on Banks' Performance using Decentralization as a Mediator

Table 5.43 presents the indirect effect of tacit knowledge sharing practices on overall performance of banks using decentralization as a mediator. This shows that while testing the mediating role of decentralization, the effect of tacit knowledge sharing

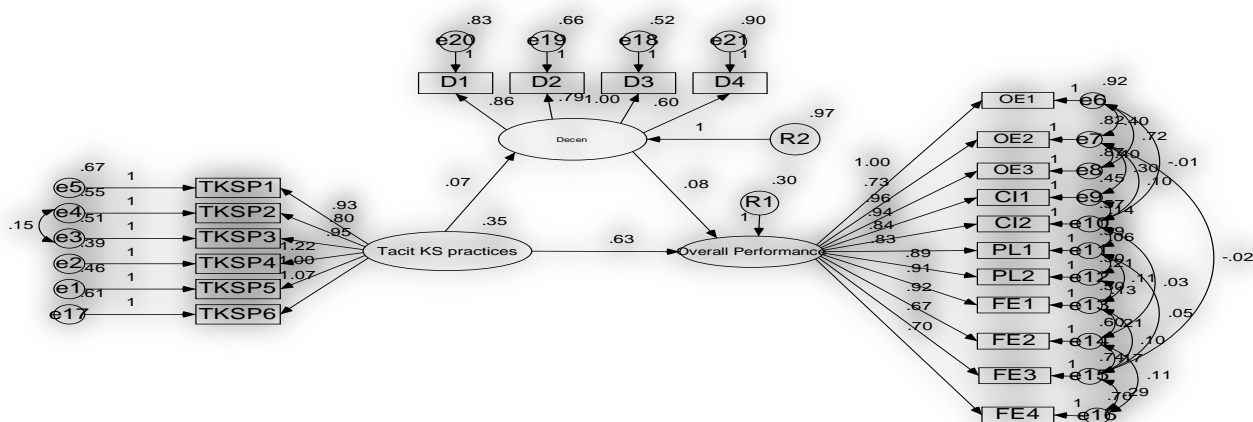
practices on overall performance of banks reduced from ($\beta=0.641$ to $\beta= 0.634$) which remain significant ($p<0.01$) thus suggests that decentralization partially mediates the relationship between tacit knowledge sharing practices and overall performance of banks.

Table 5.43 Indirect Effect of Tacit Knowledge Sharing Practices on Banks' Performance using Decentralization as a Mediator

Variables	Beta Estimate	S.E	C.R	P-value	Result
TKSP-->OP	0.634	0.064	9.941	0.000	significant
TKSP-->D	0.086	0.074	1.172	0.241	insignificant
D-->OP	0.081	0.028	2.922	0.003	significant

Table 5.44 and figure 5.17 reveals the results of fit indices through structural model to estimate the measurement model using various fit indices.

Figure 5.17 Proposed Structural Model-O



5.7.17 Indirect Effect of Tacit Knowledge Sharing Practices on Banks' Performance using Formalization as a Mediator

Table 5.45 presents the indirect effect of tacit knowledge sharing practices on overall performance of banks using formalization as a mediator. This shows that while testing the mediating role of formalization, the effect of tacit knowledge sharing practices on overall performance of banks reduced from ($\beta=0.641$ to $\beta=0.398$) which still remain significant ($p<0.01$) thus suggests that formalization partially mediates the relationship between tacit knowledge sharing practices and overall performance of banks.

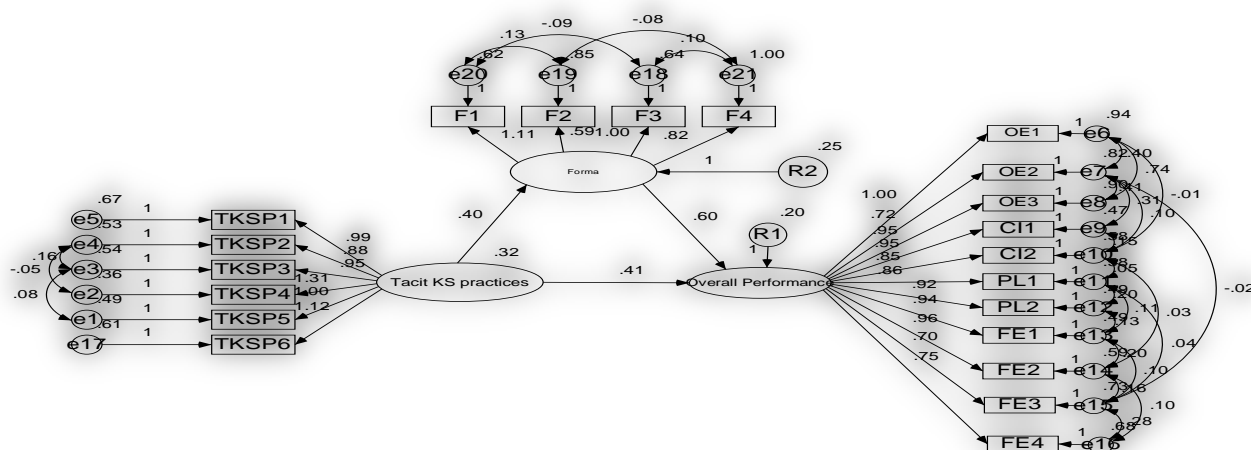
Table 5.45 Indirect Effect of Tacit Knowledge Sharing Practices on Banks' Performance using Formalization as a Mediator

Variables	Beta Estimate	S.E	C.R	P-value	Result
TKSP-->OP	0.398	0.059	6.788	0.000	significant
TKSP-->F	0.369	0.053	7.007	0.000	significant
F-->OP	0.616	0.089	6.957	0.000	significant

Table 5.46 and figure 5.18 reveal the results of fit indices through structural model to estimate the measurement model using various fit indices. The study has assessed the fitness of the structural model through estimating (1) absolute fit measures:

$X^2/df = 2.055$, $GFI=0.963$, $RMSEA=0.036$, (2) Incremental fit measures: $NFI=0.952$, $AGFI=0.947$, $CFI=0.975$ and (3) Parsimonious fit measures: $PGFI=0.667$, $PNFI=0.725$. Table 5.41 presents the overall fit indices of the structural model with scores and recommended cut-off values, suggesting that all values satisfactory meet the levels of fit indices, thus confirms that model is fit and hence suitable for testing the proposed hypotheses as discussed above.

Figure 5.18 Proposed Structural Model-P



5.7.18 Indirect Effect of Tacit Knowledge Sharing Practices on Banks’ Performance using Organizational Culture as a Mediator

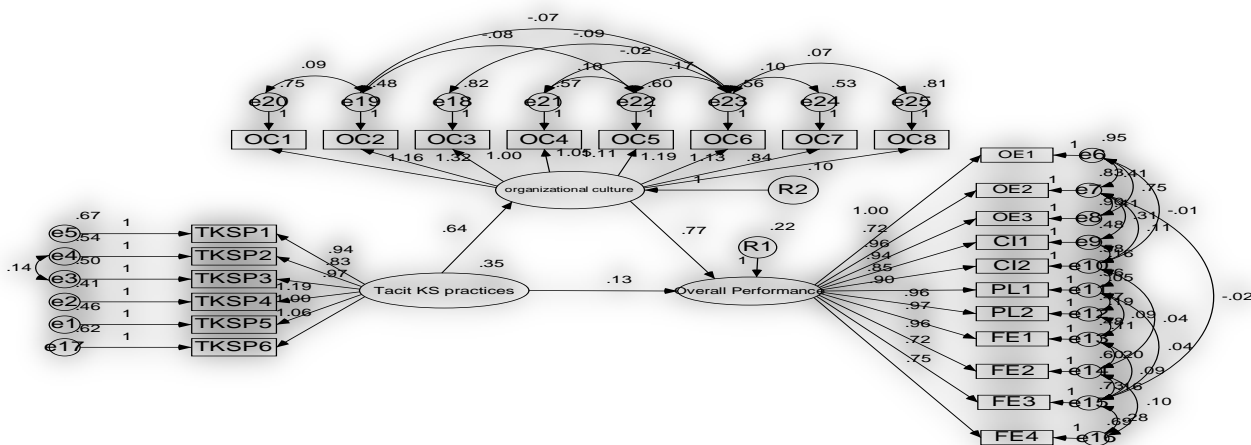
Table 5.47 presents the indirect effect of tacit knowledge sharing practices on overall performance of banks using organization culture as a mediator. This shows that while testing the mediating role of organizational culture, the effect of tacit knowledge sharing practices on overall performance of banks reduced from ($\beta=0.641$ to $\beta= 0.211$) which still remain significant ($p<0.01$) thus suggests that organizational culture partially mediates the relationship between tacit knowledge sharing practices and overall performance of banks.

Table 5.47 Indirect Effect of Tacit Knowledge Sharing Practices on Banks' Performance using Organizational Culture as a Mediator

Variables	Beta Estimate	S.E	C.R	P-value	Result
TKSP-->OP	0.211	0.077	2.733	0.006	significant
TKSP-->OC	0.585	0.058	10.104	0.000	significant
OC-->OP	0.704	0.117	6.013	0.000	significant

Table 5.48 and figure 5.19 reveals the results of fit indices through structural model to estimate the measurement model using various fit indices.

Figure 5.19 Proposed Structural Model-Q



5.7.19 Indirect Effect of Tacit Knowledge Sharing Practices on Banks' Performance using Knowledge Acquisition as a Mediator

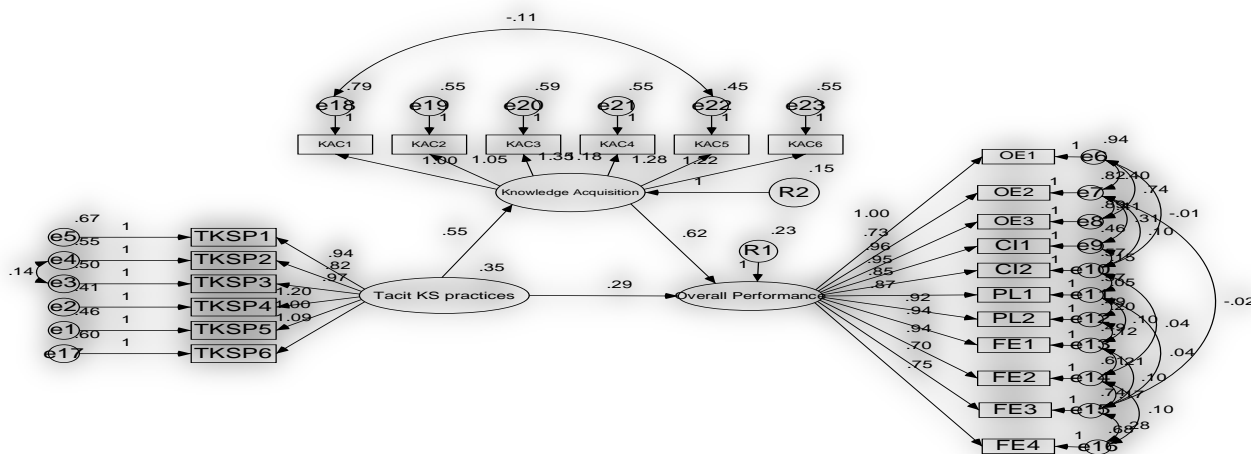
Table 5.49 presents the indirect effect of tacit knowledge sharing practices on overall performance of banks using knowledge acquisition as a mediator. This shows that while testing the mediating role of knowledge acquisition, the effect of tacit knowledge sharing practices on overall performance of banks reduced from ($\beta=0.641$ to $\beta= 0.296$) which still remain significant ($p<0.01$) thus suggests that knowledge acquisition partially mediates the relationship between tacit knowledge sharing practices and overall performance of banks.

Table 5.49 Indirect Effect of Tacit Knowledge Sharing Practices on Banks' Performance using Knowledge Acquisition as a Mediator

Variables	Beta Estimate	S.E	C.R	P-value	Result
TKSP-->OP	0.296	0.064	4.604	0.000	significant
TKSP-->KAC	0.509	0.053	9.546	0.000	significant
KAC-->OP	0.655	0.098	6.717	0.000	significant

Table 5.50 and figure 5.20 reveal the results of fit indices through structural model to estimate the measurement model using various fit indices.

Figure 5.20 Proposed Structural Model-R



5.7.20 Indirect Effect of Tacit Knowledge Sharing Practices on Banks’ Performance using Knowledge Protection as a Mediator

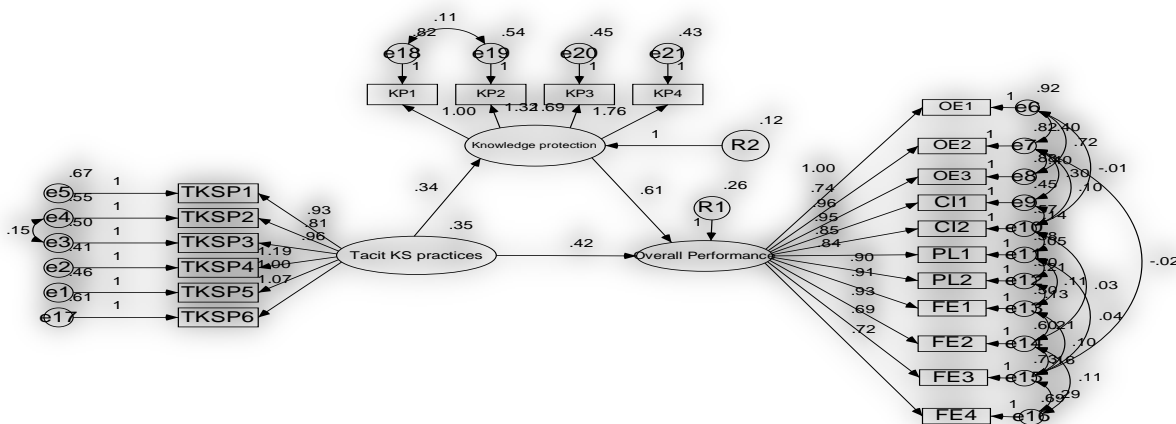
Table 5.51 presents the indirect effect of tacit knowledge sharing practices on overall performance of banks using knowledge protection as a mediator. This shows that while testing the mediating role of knowledge protection, the effect of tacit knowledge sharing practices on overall performance of banks reduced from ($\beta=0.641$ to $\beta= 0.424$) which still remain significant ($p<0.01$) thus suggests that knowledge protection partially mediates the relationship between tacit knowledge sharing practices and overall performance of banks.

Table 5.51 Indirect Effect of Tacit Knowledge Sharing Practices on Banks’ Performance using Knowledge Protection as a Mediator

Variables	Beta Estimate	S.E	C.R	P-value	Result
TKSP-->OP	0.424	0.062	6.852	0.000	Significant
TKSP-->KP	0.344	0.045	7.616	0.000	Significant
KP-->OP	0.610	0.107	5.682	0.000	Significant

Table 5.52 and figure 5.21 reveal the results of fit indices through structural model to estimate the measurement model using various fit indices.

Figure 5.21 Proposed Structural Model-S



5.7.21. Indirect Effect of Tacit Knowledge Sharing Practices on Banks’ Performance using Knowledge Conversion as a Mediator

Table 5.53 presents the indirect effect of tacit knowledge sharing practices on overall performance of banks using knowledge conversion as a mediator. This shows that while testing the mediating role of knowledge conversion, the effect of tacit knowledge sharing practices on overall performance of banks reduced from ($\beta=0.641$ to $\beta= 0.335$)

which still remain significant ($p < 0.01$) thus suggests that knowledge conversion partially mediates the relationship between tacit knowledge sharing practices and overall performance of banks.

Table 5.53 Indirect Effect of Tacit Knowledge Sharing Practices on Banks' Performance using Knowledge Conversion as a Mediator

Variables	Beta Estimate	S.E	C.R	P-value	Result
TKSP-->OP	0.335	0.068	4.958	0.000	Significant
TKSP-->KC	0.799	0.064	12.472	0.000	Significant
KC-->OP	0.374	0.057	6.512	0.000	Significant

Table 5.54 and figure 5.22 reveal the results of fit indices through structural model to estimate the measurement model using various fit indices.

5.7.24. Indirect Effect of Tacit Knowledge Sharing Practices on Banks' Performance using Structural Capital Practices as a Mediator

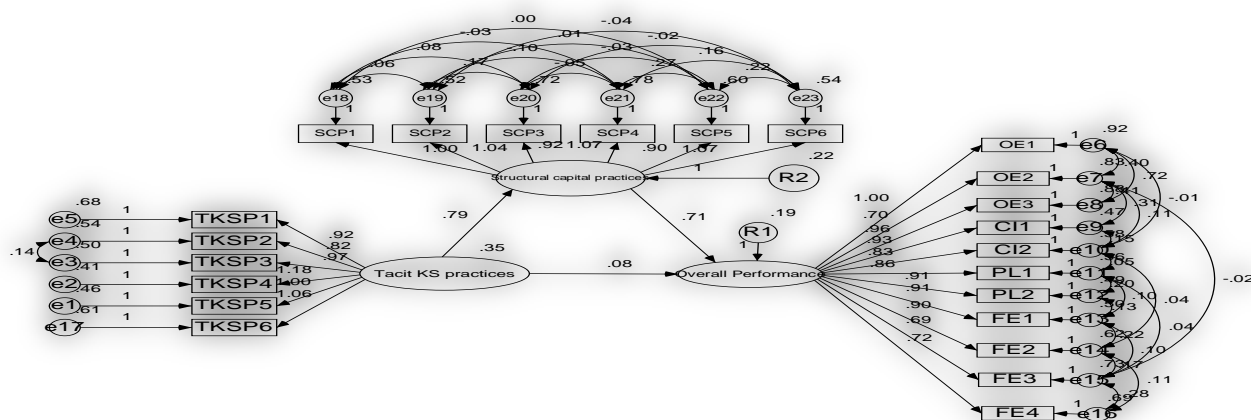
Table 5.59 presents the indirect effect of tacit knowledge sharing practices on overall performance of banks using structural capital practices as a mediator. This shows that while testing the mediating role of structural capital practices, the effect of tacit knowledge sharing practices on overall performance of banks reduced from ($\beta=0.641$ to $\beta= 0.196$) which still remain significant ($p<0.01$) thus suggests that structural capital practices partially mediates the relationship between tacit knowledge sharing practices and overall performance of banks.

Table 5.59 Indirect Effect of Tacit Knowledge Sharing Practices on Banks' Performance using Structural Capital Practices as a Mediator

Variables	Beta Estimate	S.E	C.R	P-value	Result
TKSP-->OP	0.196	0.063	3.124	0.002	Significant
TKSP-->SCP	0.727	0.059	12.426	0.000	Significant
SCP-->OP	0.606	0.069	8.801	0.000	Significant

Table 5.60 and figure 5.25 reveal the results of fit indices through structural model to estimate the measurement model using various fit indices.

Figure 5.25 Proposed Structural Model-W



5.7.25. Indirect Effect of Tacit Knowledge Sharing Practices on Banks' Performance using Relational Capital Practices as a Mediator

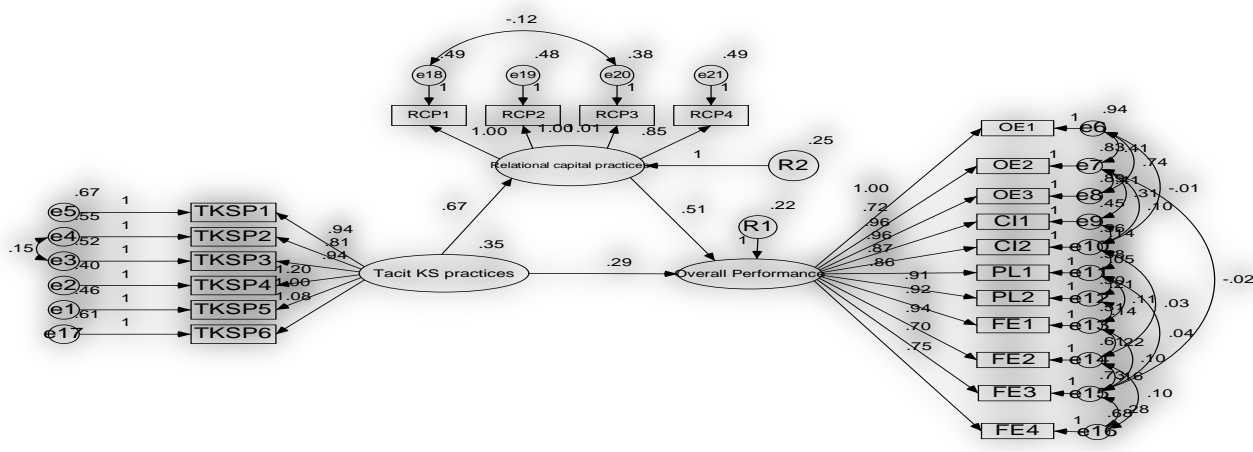
Table 5.61 presents the indirect effect of tacit knowledge sharing practices on overall performance of banks using relational capital practices as a mediator. This shows that while testing the mediating role of relational capital practices, the effect of tacit knowledge sharing practices on overall performance of banks reduced from ($\beta=0.641$ to $\beta= 0.280$) which still remain significant ($p<0.01$) thus suggests that relational capital practices partially mediates the relationship between tacit knowledge sharing practices and overall performance of banks.

Table 5.61 Indirect Effect of Tacit Knowledge Sharing Practices on Banks' Performance using Relational Capital Practices as a Mediator

Variables	Beta Estimate	S.E	C.R	P-value	Result
TKSP-->OP	0.280	0.064	4.406	0.000	Significant
TKSP-->RCP	0.617	0.056	11.054	0.000	Significant
RCP-->OP	0.559	0.075	7.425	0.000	Significant

Table 5.62 and figure 5.26 reveal the results of fit indices through structural model to estimate the measurement model using various fit indices.

Figure 5.26 Proposed Structural Mode-X



5.8. Individual Effect of Knowledge Sharing Practices on Mediating Variables.

5.8.1. Individual Effect of Explicit Knowledge Sharing Practices on Knowledge Management Strategy, Knowledge Infrastructure Capability, Knowledge Process Capability and Intellectual Capital Practices

Table 5.63 and 5.64 present the results of multiple regressions to find the impact of individual explicit KS practices on mediating variables and dependent variable. Our study considers five important practices from a number of explicit KS practices. The first explicit KS practice is whether “employees in organization frequently share existing reports and official documents with colleagues” and response to this practice vary from 1 to 5 with mean value of 3.47 and standard deviation of 1.021. Even though this practice

has better loading value (loading factor =.706), but when this practice is entered into multiple regressions analysis it provided surprising results. It does not affect positively any mediating variable. Table 5.38 and 5.39 reveal that EKSP1 has negative relationship with all the mediating variables.

The second explicit KS practice is “employees in my organization frequently collect reports and official documents from others in their work” with mean value of 2.78 and standard deviation of 1.12 and with high loading factor (loading factor =.835). However, the results of multiple regressions analysis reveals that second explicit KS practice has positive and statistical significant relationship with all the mediating variables system oriented strategy ($\beta=.191$; $p<0.01$), human oriented strategy ($\beta=.180$; $p<0.01$), technology ($\beta=.124$; $p<0.05$), formalization ($\beta=.175$; $p<0.01$), organizational culture ($\beta=.226$; $p<0.01$), knowledge acquisition ($\beta=.146$; $p<0.01$), knowledge protection ($\beta=.173$; $p<0.01$), knowledge conversion($\beta=.164$; $p<0.01$), knowledge application ($\beta=.148$; $p<0.01$), human capital practices ($\beta=.214$; $p<0.01$), structural capital practices ($\beta=.227$; $p<0.01$), relational capital practices ($\beta=.147$; $p<0.01$) except decentralization. Similarly, in case of dependent variable, it also reveals positive ($\beta=.160$) and statistical significant ($p<0.01$) relationship with overall performance of banks.

Third, explicit KS practice is “employees in my organization are frequently encouraged by knowledge sharing mechanisms” with mean value of 3.60 and standard deviation of .974 along with high loading value (loading factor =.884) as provided in table 5.6. This practice also provides surprising results indicating that it does not significantly affects any mediating variable. Table 5.38 and 5.39 regarding the results of (EKSP3) postulate

that banks needs to encourage the suitable mechanisms to share the explicit knowledge within and outside of the organization. Variety of training and development programs are the fifth explicit KS practice with mean value of 3.54 and standard deviation of .950 and loading factor =.862. This practice significantly affects the system oriented strategy ($\beta=.134$; $p<0.05$), technology ($\beta=.170$; $p<0.01$), knowledge acquisition ($\beta=.097$; $p<0.10$) and human capital practices ($\beta=.105$; $p<0.10$). However, it does not significantly influence the human oriented strategy, decentralization, formalization, organizational culture, knowledge protection, knowledge application, structural capital practices and relational capital practices.

Fifth explicit knowledge sharing practice is “employees in my organization are facilitated by IT systems invested for knowledge sharing” with mean value of 3.49 and standard deviation of 1.038 and high loading value of 0.861. However, when this practice is entered in multiple regressions model, it produced surprising results. It does not significantly affect the most of mediating variables and as well dependent variable (overall performance of banks). It only reveals the significant but negative relationship with system oriented strategy ($\beta= -.159$; $p<0.01$), human oriented strategy ($\beta= -.133$; $p<0.05$), technology ($\beta= -.104$; $p<0.05$) and human capital practices ($\beta= -.116$; $p<0.05$).

Table 5.63 Multiple Regression Analysis to Find the Effect of Individual Explicit KS Practices on KM Strategy and Knowledge Infrastructure Capability

Independent variables	Dependent variables					
	SOS	HOS	T	D	F	OC
EKSP1	-.011 (-.262)	-.081*** (-1.926)	-.002 (-.037)	-.002 (-.044)	-.093** (-2.202)	-.084** (-2.007)
EKSP2	.191* (3.621)	.180* (3.400)	.124** (2.351)	-.025 (-.462)	.175* (3.298)	.226* (4.277)

EKSP3	.011 (0.192)	.060 (1.048)	-.020 (-.358)	-.007 (-.129)	.049 (.863)	-.032 (-.560)
EKSP4	.134** (2.291)	.058 (.990)	.170* (2.890)	-.011 (-.184)	.013 (.216)	.080 (1.358)
EKSP5	-.159* (-3.017)	-.133** (-2.502)	-.104** (-1.969)	.015 (.279)	-.017 (-.322)	-.068 (-1.289)
Adjusted R²	0.035	0.023	0.026	-0.005	0.024	0.031
F-statistics	6.828*	4.838*	5.295*	0.139	5.038*	6.155*

Legend: *, ** and *** represents the significance level at 1%, 5% and 10% respectively

Value in parentheses represents the t-ratios

SOS=System oriented strategy

HOS=Human Oriented Strategy

T=Technology

D=Decentralization

F=Formalization

OC=Organizational culture

Table 5.64 Multiple Regression Analysis to Find the Effect of Individual Explicit KS Practices on Knowledge Process Capability and Human Capital Practices

Independent variables	Dependent variables						
	KAC	KP	KC	KAP	HCP	SCP	RCP
EKSP1	-.068 (-1.607)	-.049 (-1.160)	-.077*** (-1.830)	-.078*** (-1.844)	-.044 (-1.060)	-.102** (-2.453)	-.042 (-.992)
EKSP2	.146* (2.761)	.173* (3.248)	.164* (3.102)	.148* (2.777)	.214* (4.062)	.227* (4.336)	.142* (2.693)
EKSP3	.046 (.811)	-.023 (-.409)	.013 (.237)	.061 (1.059)	-.018 (-.313)	.000 (-.002)	.043 (.748)
EKSP4	.063 (1.074)	.020 (.336)	.097*** (1.654)	.026 (.437)	.105*** (1.784)	.023 (.397)	.080 (1.354)
EKSP5	-.023 (-.429)	.004 (.070)	-.047 (-.878)	-.054 (-1.020)	-.116** (-2.196)	.022 (.411)	-.047 (-.888)
Adjusted R²	0.026	0.017	0.027	0.016	0.031	0.042	0.026
F-statistics	5.37*	3.762*	5.568	3.664*	6.141*	8.083*	5.330*

Legend: *, ** and *** represents the significance level at 1%, 5% and 10% respectively

Value in parentheses represents the t-ratios

KAC=Knowledge Acquisition

KP=Knowledge Protection

KC=Knowledge conversion

KAP=Knowledge Protection

HCP=Human capital practices

SCP=Structural capital practices

RCP=Relational capital practices

5.8.2. Individual Effect of Tacit Knowledge Sharing Practices on Knowledge Management Strategy and Knowledge Infrastructure Capability, Knowledge Process Capability and Intellectual Capital Practices

Table 5.65 and 5.66 present the results of multiple regressions analysis to find the direct effect of individual tacit KS practices on mediating variables. The study considers the six important tacit KS practices out of number of practices are available. The first tacit KS practice is “employees in organization frequently share knowledge based on their experience”. The response to this practice varies from 1 to 5 with mean value of

3.58 and standard deviation of .989 along with loading to this practice (loading factor =.638). In table 5.40 and 5.41 regression results demonstrate that this practice positive and significantly affects the system oriented strategy ($\beta=.118$; $p<0.01$), human oriented strategy ($\beta=.122$; $p<0.01$), technology ($\beta=.073$; $p<0.05$), formalization ($\beta=.069$; $p<0.10$), organizational culture ($\beta=.145$; $p<0.01$), knowledge acquisition ($\beta=.115$; $p<0.01$), knowledge protection ($\beta=.123$; $p<0.01$), knowledge application ($\beta=.093$; $p<0.01$), human capital practices ($\beta=.115$; $p<0.01$), structural capital practices ($\beta=.101$; $p<0.01$) and relational capital practices ($\beta=.153$; $p<0.01$). However, it does not significantly influence the decentralization, and knowledge conversion.

A second tacit KS practice is “employees in my organization frequently share knowledge of know-where or know-whom with others” with mean value of 3.24 and standard deviation of 1.067. Besides, high loading factor (loading factor =0.685), this practice indicates positive and statistically significant relationship with mediating variables, system oriented strategy ($\beta=.162$; $p<0.01$), human oriented strategy ($\beta=.164$; $p<0.01$), technology ($\beta=.132$; $p<0.01$), decentralization ($\beta=.092$; $p<0.10$), organizational culture ($\beta=.159$; $p<0.01$), knowledge acquisition ($\beta=.110$; $p<0.01$), knowledge protection ($\beta=.079$; $p<0.10$), knowledge conversion ($\beta=.183$; $p<0.01$) knowledge application ($\beta=.163$; $p<0.01$), human capital practices ($\beta=.084$; $p<0.10$), structural capital practices ($\beta=.160$; $p<0.01$) and relational capital practices ($\beta=.122$; $p<0.01$) respectively. However, this practice is not significantly related with formalization.

Third tacit KS practice is “employees in my organization frequently collect knowledge of know-where or know-whom with others”. This practice was also rated from 1 to 5 with a

mean value of 3.44 and standard deviation of .882. The effect of this practice appears to be positive and significant in case of technology ($\beta=.092$; $p<0.01$), organizational culture ($\beta=.148$; $p<0.01$), knowledge acquisition ($\beta=.153$; $p<0.01$), knowledge protection ($\beta=.123$; $p<0.01$), knowledge conversion ($\beta=.128$; $p<0.01$), knowledge application ($\beta=.085$; $p<0.01$) and structural capital practices ($\beta=.165$; $p<0.01$) respectively. However, this practice does not significantly affect the system and human oriented strategy, decentralization, formalization, human and structural capital practices.

Forth tacit KS practice is “employees in my organization frequently share knowledge based on their expertise” with mean value of 3.47 and standard deviation of .910. This practice positive and significant affect the system oriented strategy ($\beta=.119$; $p<0.01$), technology ($\beta=.104$; $p<0.05$), formalization ($\beta=.117$; $p<0.05$), organizational culture ($\beta=.152$; $p<0.01$), knowledge acquisition ($\beta=.078$; $p<0.10$), structural capital practices ($\beta=.080$; $p<0.05$) and relational capital practices ($\beta=.106$; $p<0.05$) respectively. However, it does not significantly influence human oriented strategy, decentralization, knowledge protection, knowledge conversion, knowledge application and human capital practices.

Fifth tacit KS practice is “Employees in my organization frequently collect knowledge from others based on their expertise” with a mean value of 3.59 and standard deviation of .952 along with a good loading factor (i.e. loading factor=.716). The results of multiple regressions analysis postulates that this practice has positive and significant relationship with system oriented strategy ($\beta=.186$; $p<0.01$), human oriented strategy ($\beta=.135$; $p<0.01$), technology ($\beta=.184$; $p<0.01$), organizational culture ($\beta=.176$; $p<0.01$), knowledge acquisition ($\beta=.121$; $p<0.01$), knowledge protection ($\beta=.147$; $p<0.01$),

knowledge conversion ($\beta=.203$; $p<0.01$), knowledge application ($\beta=.137$; $p<0.01$), human capital practices ($\beta=.120$; $p<0.01$), structural capital practices ($\beta=.171$; $p<0.01$) and relational capital practices ($\beta=.164$; $p<0.01$) respectively. Further, results show that knowledge conversion captures more effect from this practice as compare to other mediating variables. However, it does not reveal statistical significant relationship with decentralization and formalization.

The last tacit KS practice included in this study is whether “employees in my organization will share lessons from past failures when they sense that it is necessary” or not with mean score of 3.62 and standard deviation of .900 and loading value of .686. The effects of this appears to be significant with system oriented strategy ($\beta=.181$; $p<0.01$), human oriented strategy ($\beta=.176$; $p<0.01$), technology ($\beta=.201$; $p<0.01$), formalization ($\beta=.068$; $p<0.10$), organizational culture ($\beta=.127$; $p<0.01$), knowledge acquisition ($\beta=.200$; $p<0.01$), knowledge protection ($\beta=.163$; $p<0.01$), knowledge conversion ($\beta=.222$; $p<0.01$), knowledge application ($\beta=.248$; $p<0.01$), human capital practices ($\beta=.214$; $p<0.10$), structural capital practices ($\beta=.168$; $p<0.01$) and relational capital practices ($\beta=.176$; $p<0.01$) respectively with expected positive signs. However, this practice is not significantly related with decentralization.

Table 5.65 Multiple Regression Analysis to Find the Effect of Individual Tacit KS Practices on KM Strategy and Knowledge Infrastructure Capability

Independent variables	Dependent variables					
	SOS	HOS	T	D	F	OC
TKSP1	.118* (3.413)	.122* (3.328)	.073** (2.089)	-.067 (-1.630)	.069*** (1.734)	.145* (4.403)
TKSP2	.162* (3.958)	.164* (3.779)	.132* (3.182)	.092*** (1.908)	.039 (.824)	.159* (4.089)
TKSP3	.054 (1.290)	.052 (1.170)	.092** (2.161)	.043 (.857)	.059 (1.236)	.148* (3.715)
TKSP4	.119* (2.905)	.044 (1.006)	.104** (2.511)	-.077 (-1.586)	.117** (2.493)	.152* (3.892)
TKSP5	.186* (4.604)	.135* (3.154)	.184* (4.474)	.061 (1.275)	.039 (.836)	.176* (4.553)
TKSP6	.181* (5.161)	.176* (4.734)	.201* (5.652)	.011 (.275)	.068*** (1.671)	.127* (3.790)
Adjusted R ²	.296	.208	.276	.008	0.066	0.358
F-statistics	57.636*	36.446*	52.37*	2.039*	10.529*	76.202*

Legend: *, ** and *** represents the significance level at 1%, 5% and 10% respectively

Value in parentheses represents the t-ratios

SOS=System oriented strategy

HOS=Human Oriented Strategy

T=Technology

D=Decentralization

F=Formalization

OC=Organizational culture

Table 5.66 Multiple Regression Analysis to Find the Effect of Individual Tacit KS Practices on Knowledge Process Capability and Intellectual Capital Practices

Independent variables	Dependent variables						
	KAC	KP	KC	KAP	HCP	SCP	RCP
TKSP1	.115* (3.263)	.123* (3.253)	.031 (.903)	.093* (2.658)	.115* (3.128)	.101* (2.964)	.154* (4.300)
TKSP2	.110* (2.653)	.079*** (1.769)	.183* (4.510)	.163* (3.944)	.084*** (1.929)	.160* (3.958)	.122* (2.880)
TKSP3	.153* (3.603)	.123* (2.691)	.128* (3.091)	.085** (1.996)	.066 (1.478)	.165* (3.999)	.016 (.374)
TKSP4	.078*** (1.885)	-.032 (-.709)	.053 (1.300)	.053 (1.278)	.067 (1.552)	.080** (1.988)	.106 (2.509)
TKSP5	.121* (2.937)	.147* (3.314)	.203* (5.056)	.137* (3.348)	.120* (2.796)	.171* (4.272)	.164* (3.910)
TKSP6	.200* (5.601)	.163* (4.257)	.222* (6.384)	.248* (6.981)	.214* (5.722)	.168* (4.834)	.176* (4.849)
Adjusted R ²	0.268	.1620	0.306	0.275	0.202	0.310	.245
F-statistics	50.465*	26.621*	60.360*	52.259*	35.182*	61.711*	44.659*

Legend: *, ** and *** represents the significance level at 1%, 5% and 10% respectively

Value in parentheses represents the t-ratios

KAC=Knowledge Acquisition

KP= Knowledge Protection

KC=Knowledge conversion

KAP=Knowledge application

HCP=Human capital practices

SCP=Structural capital practices

RCP=Relational capital practices

5.9. Individual Effect of Knowledge Sharing Practices on Overall Performance of banks

5.9.1. Individual Effect of Explicit Knowledge Sharing Practices on Overall Performance of Banks

Table 5.67 presents the results of multiple regression analysis to find the individual effect of explicit KS practices on overall performance of banks. It reveals that out of six explicit KS practices, EKSP1 and EKSP2 ($\beta=-.109$; $\beta=.281$; $p=0.01$)

significantly related with overall performance of banks where as EKSP1 inversely related with performance of banks. The value of adjusted R^2 postulates that all the five explicit KS practices bring out 7.2% variation in overall performance of banks. Further, the value of F-statistics (13.508) is significant at less than 1% which postulates that combined effect of all explicit KS practices on overall performance is significant. However, EKS3, EKSP4 and EKSP5 are not significantly associated with overall performance of banks.

Table 5.67 Multiple Regression Analysis to Find the Effect of Individual Explicit KS Practices on Overall Performance of Banks

Dependent Variable	Independent Variable				
	EKSP1	EKSP2	EKSP3	EKSP4	EKSP5
Overall Performance	-.109*	.281*	.057	.047	-.044
t-statistics	-2.650	5.446	1.032	.813	-.848
Adjusted R^2	0.072				
F-Statistics	13.508*				

*, ** and *** represents the significance level at 1%, 5% and 10%

respectively

5.9.2. Individual Effect of Tacit Knowledge Sharing Practices on Overall Performance of Banks

Table 5.68 reveals the results of multiple regression analysis to find the effect of individual tacit KS practices on overall performance of banks. The value of Adjusted R^2 suggests that 19.8% variation in overall performance of banks is the result of variance in independent variable (i.e. individual explicit KS practices). It also reveals that out of six tacit KS practices, TKSP1, TKSP2 TKSP4, TKSP5 and TKSP6 have positive ($\beta=.062$;

$\beta=.092$; $\beta=.150$; $\beta=.092$ and $\beta=.192$) and statistical significant ($p<0.01$; $p<0.05$; $p<0.01$; $p<0.05$; $p<0.01$) relationship with overall performance of banks. However TKSP5 is not significantly associated with overall performance of banks. Further value of F-statistics (29.824) which is significant thus indicates that joint effect of all the tacit KS practices is also significant.

Table 5.68 Multiple Regression Analysis to Find the Effect of Individual Tacit KS Practices on Overall Performance of Banks

Dependent Variable	Independent Variable					
	TKSP1	TKSP2	TKSP3	TKSP4	TKSP5	TKSP6
Overall Performance	.062***	.092**	.064	.150*	.092**	.192*
t-statistics	1.674	2.116	1.441	3.430	2.121	5.139
Adjusted R ²	0.198					
F-Statistics	34.229*					

*, ** and *** represents the significance level at 1%, 5% and 10% respectively

5.10. Individual Effect of Mediating Variables on Overall Performance of Banks

5.10.1 Individual Effect of System Oriented Strategy on Overall Performance of Banks

Table 5.69 demonstrates the results of multiple regression analysis to find the effect of individual system oriented strategy on overall performance of banks. The value of Adjusted R² suggests that 21.6% variation in overall performance of banks is the result of variance in independent variable (i.e. individual system oriented strategy). It reveals that all the items of system oriented strategies, (i.e. SOS1, SOS2_r and SOS3) are positively ($\beta=.269$; $\beta=.225$; $\beta=.143$) and statistical significantly ($p<0.01$) associated with

overall performance of banks. Further value of F-statistics (75.374) indicates that joint effect of all the system oriented strategy is also significant.

Table 5.69 Multiple Regression Analysis to Find the Effect of Individual System Oriented Strategy on Overall Performance of Banks

Dependent variable	Independent variables		
	SOS1	SOS2	SOS3
Overall Performance	.269*	.225*	.143*
t-statistics	7.800	5.681	3.541
Adjusted R ²	.216		
F-statistics	75.374*		

*, ** and *** represents the significance level at 1%, 5% and 10% respectively

5.10.2. Individual Effect of Human Oriented Strategy on Overall Performance of Banks

Table 5.70 presents the results of multiple regression analysis to find the individual effect of mediating variable (i.e. human oriented strategy) on dependent variable (i.e. overall performance) of banks. The value of adjusted R² exhibits that 16.9% variation in overall performance of banks is the result of variance in independent variable (i.e. individual items of human oriented strategy). It also reveals that out of three system oriented strategies, two (i.e. HOS2 and HOS3) significantly ($\beta=.170$, $p<0.01$; $\beta=.305$, $p<0.01$) linked with overall performance of banks. Further value of F-statistics (55.783), indicates that joint effect of all the items of human oriented strategy is also significant. However, HOS1 is not significantly associated with overall performances.

Table 5.70 Multiple Regression Analysis to Find the Effect of Individual Human Oriented Strategy on Overall Performance of Banks

Dependent variable	Independent variable		
	HOS1	HOS2	HOS3
Overall Performance	.029	.170*	.305*
t-statistics	.928	4.837	8.789

Adjusted R²	.169		
F-statistics	55.783*		

*, ** and *** represents the significance level at 1%, 5% and 10% respectively

5.10.3. Individual Effect of Technology on Overall Performance of Banks

Table 5.71 exhibits the results of multiple regression analysis to find the individual effect of mediating variable (i.e. technology) on dependent variable (i.e. overall performance) of banks. The value of adjusted R^2 exhibits that 26.1% variation in overall performance of banks is the result of variance in independent variable (i.e. technology). The results postulates that all the three items of technology (i.e. T1, T2 and T3) positive and significantly ($\beta=.0202$, $p<0.01$; $\beta=.140$, $p<0.01$; $\beta=.324$, $p<0.01$) influence the overall performance of banks. Further value of F-statistics (96.053) indicates that joint effect of all the items of technology is also significant.

Table 5.71 Multiple Regression Analysis to Find the Effect of Technology on Overall Performance of Banks

Dependent variable	Independent variable		
	T1	T2	T3
Overall Performance	.202*	.140*	.324*
t-statistics	5.891	3.507	8.339
Adjusted R^2	0.261		
F-statistics	96.053*		

*, ** and *** represents the significance level at 1%, 5% and 10% respectively

5.10.4. Individual Effect of Decentralization on Overall Performance of Banks

Multiple regression analysis is employed to find the individual effect of mediating variable (i.e. decentralization) on dependent variable (i.e. overall performance) of banks. Table 5.72 presents that value of adjusted R^2 exhibits that 8.3% variation in overall performance of banks is the result of variance in independent variable (i.e. decentralization). Table 5.47 shows that out of four items of decentralization, two items

i.e. (D3) “employees in our organization do not need to ask their supervisor before taking action” and (D4) “employees in our organization do not need to ask their supervisor before taking action” significantly ($p < 0.01$) associated with overall performance of banks. However, D4 inversely related with performance of banks. Nevertheless, it is also observed that D3 contributes more in determining the banks performance due to the high value of coefficient ($\beta = .112$) relative to other items whereas D1 and D2 are not significantly influence the performance of banks. Further value of F-statistics (5.918) indicates that combined effect of all the five items of decentralization is also significant.

Table 5.72 Multiple Regression Analysis to Find the Effect of Decentralization on Overall Performance of Banks

Dependent variable	Independent variable			
	D1	D2	D3	D4
Overall Performance	.052	.012	.112*	-.100*
t-statistics	1.494	.318	2.953	-2.830
Adjusted R ²	.024			
F-statistics	5.918*			

*, ** and *** represents the significance level at 1%, 5% and 10% respectively

5.10.5. Individual Effect of Formalization on Overall Performance of Banks

Table 5.73 shows the results of multiple regression analysis to find the individual effect of mediating variable (i.e. formalization) on dependent variable (i.e. overall performance) of banks. Adjusted R² indicates that 18.1% variation in overall performance of banks is the result of variance in independent variable (i.e. formalization). Table 5.48 presents that out of four items of formalization, three items i.e. (F1) “in our organization there are many activities that are covered by formal procedures”, (F3) “in our organization, rules and procedures are typically written”, and (F4) “in our organization,

employees cannot make their own rules on the job” have positive and statistical significant ($\beta=.257$, $p<0.01$; $\beta=.214$, $p<0.01$; $\beta=.124$, $p<0.01$) relationship respectively with overall performance of banks. Further, F-statistics (45.572) indicates that combined effect of all the four items of formalization is also significant. However, F2 is not significantly associated with overall performance of banks. Nevertheless, it is also observed that three items of formalization contributes more in determining the banks’ performance due to the high value of coefficients.

Table 5.73 Multiple Regression Analysis to Find the Effect of Formalization on Overall performance of banks

Dependent variable	Independent variable			
	F1	F2	F3	F4
Overall Performance	.257*	.000	.214*	.120*
t-statistics	7.350	-.009	5.948	3.848
Adjusted R ²	0.181			
F-statistics	45.572*			

*, ** and *** represents the significance level at 1%, 5% and 10% respectively

5.10.6. Individual Effect of Organizational Culture on Overall Performance of Banks

Table 5.74 presents the results of multiple regression analysis to find the individual effect of mediating variable (i.e. organizational culture) on dependent variable (i.e. overall performance) of banks. Adjusted R² shows that 30% variation in overall performance of banks is the result of change in independent variable (i.e. organizational culture). Table 5.49 indicates that out of eight items of organizational culture, five items i.e. (OC1) “employees are satisfied with amount of collaboration.”, (OC2) “employees

are helpful”, (OC3) “willingness to accept responsibility for failure”,(OC4) “employees are generally trustworthy,” and (OC7) “reciprocal faith in other members ‘commitment to the company as a whole” significantly encourage the overall performance of banks ($\beta=.142$, $p<0.01$; $\beta=.264$, $p<0.01$; $\beta=.120$, $p<0.01$; $\beta=.187$, $p<0.01$; $\beta=.113$) respectively. Further, F-statistics (44.355) indicates that joined effect of all the eight items of organizational culture is also significant. However, OC5, OC6 and OC8 are not significantly associated with overall performance of banks.-

Table 5.74 Multiple Regression Analysis to Find the Effect of Organizational Culture on Overall Performance of Banks

Dependent variable	Independent variable							
	OC1	OC2	OC3	OC4	OC5	OC6	OC7	OC8
Overall Performance	.142*	.264*	.120*	.187*	.036	-.010	.113*	-.042
t-statistics	4.225	6.870	3.825	4.955	.888	-.252	2.785	-1.258
Adjusted R ²	0.300							
F-statistics	44.355*							

*, ** and *** represents the significance level at 1%, 5% and 10% respectively

5.10.7. Individual Effect of Knowledge Acquisition on Overall Performance of Banks

Table 5.75 illustrates the results of multiple regression analysis to find the individual effect of mediating variable (i.e. knowledge acquisition) on dependent variable (i.e. overall performance) of banks. Adjusted R² illustrates that 27% variation in overall performance of banks is the result of change in independent variable (i.e. knowledge acquisition). Results also indicate that out of six items of knowledge acquisition, five items i.e. (KAC1) “generating new knowledge from existing knowledge”, (KAC3)

“processes for acquiring knowledge about competitors within our industry”, (KAC4) “benchmarking performance among employees and departments,” (KAC5) “processes for identifying and upgrading best practices” and (KAC6) “processes for replacing outdated knowledge with new knowledge” have positive and statistical significant ($\beta=.262$, $p<0.01$; $\beta=.090$, $p<0.05$; $\beta=.067$, $p<0.10$; $\beta=.195$, $p<0.01$; $\beta=.115$, $p<0.01$) relationship respectively with overall performance of banks. Further, F-statistics (50.871) reveals that joined effect of all the eight items of knowledge acquisition is also significant. However, KAC2 are not significantly associated with overall performance of banks.

Table 5.75 Multiple Regression Analysis to Find the Effect of Knowledge Acquisition on Overall Performance of Banks

Dependent variable	Independent variable					
	KAC1	KAC2	KAC3	KAC4	KAC5	KAC6
Overall Performance	.262*	.044	.090**	.067***	.195*	.115*
t-statistics	8.264	1.146	2.448	1.742	4.820	3.013
Adjusted R ²	0.270					
F-statistics	50.871*					

*, ** and *** represents the significance level at 1%, 5% and 10% respectively

5.10.8. Individual effect of Knowledge Protection on Overall Performance of Banks

Table 5.76 reveals the results of multiple regression analysis to find the individual effect of mediating variable (i.e. knowledge protection) on dependent variable (i.e. overall performance) of banks. Adjusted R² illustrates that 19.2% variation in overall performance of banks is the result of change in independent variable (i.e. knowledge protection). Results exemplifies that out of four items of knowledge protection, three

items i.e. (KP1) “password system, to restrict access to particular sources of knowledge”, (KP2) “processes to protect embedded tacit knowledge”, and (KP4) “communicate protection of knowledge on a corporate level” significantly ($\beta=.063$, $p<0.10$; $\beta=.238$, $p<0.01$; $\beta=.246$, $p<0.01$) influence the overall performance of banks. Further, KP4 contributes relatively more in determining the overall performance of banks. Nevertheless, value of F-statistics (49.181) indicates that joined effect of all the eight items of knowledge protection is also significant.

Table 5.76 Multiple Regression Analysis to Find the Effect of Knowledge Protection on Overall Performance of Banks

Dependent variable	Independent variable			
	KP1	KP2	KP3	KP4
Overall Performance	.063***	.238*	.068	.246*
t-statistics	1.811	5.846	1.640	6.167
Adjusted R ²	0.192			
F-statistics	49.181*			

*, ** and *** represents the significance level at 1%, 5% and 10% respectively

5.10.9. Individual Effect of Knowledge Conversion on Overall Performance of Banks

Table 5.77 shows the results of multiple regression analysis to find the individual effect of mediating variable (i.e. knowledge protection) on dependent variable (i.e. overall performance) of banks. All the items of knowledge conversion bring out 23.9% change in overall performance of banks. Results illustrate that out of five items of knowledge conversion, four items i.e. (KC1) “bank has processes for converting competitive intelligence into action plans”, (KC2) “bank has processes for filtering and

evaluating knowledge”, (KC4) “absorbing knowledge from partners into organizational knowledge” and (KC5) “integrating different sources and types of knowledge” have positive and significant ($\beta=.250$, $p<0.01$; $\beta=.105$, $p<0.05$; $\beta=.183$, $p<0.01$; $\beta=.072$, $p<0.05$) relationship with overall performance of banks whereas KC3 is not significant influence the performance of banks. Further, F-statistics =51.728 postulates that joined effect of all the five items of knowledge conversion is also significant.

Table 5.77 Multiple Regression Analysis to Find the Effect of Knowledge Conversion on Overall Performance of Banks

Dependent variable	Independent variable				
	KC1	KC2	KC3	KC4	KC5
Overall Performance	.250*	.105**	.020	.183*	.072**
t-statistics	6.703	2.533	.473	4.182	1.873
Adjusted R ²	0.239				
F-statistics	51.728*				

*, ** and *** represents the significance level at 1%, 5% and 10% respectively

5.10.10. Individual Effect of Knowledge Application on Overall Performance of Banks

The results of multiple regression analysis are presented in table 5.78 which illustrate the individual effect of mediating variable (i.e. knowledge application) on dependent variable (i.e. overall performance) of banks. Adjusted R² postulates that 24.5% variation in overall performance of banks and F-statistics =44.869 reveal that joined effect of all the items of knowledge application is also significant. Further, table 5.53 exhibits that out of six items of knowledge conversion, four items i.e. (KAP1) “Feedback from past experience to improve future projects”, (KAP2) “bank has processes for

learning from past mistakes”, (KAP4) “applying stored knowledge to improve efficiency”, and (KAP6) “bank has processes for quickly linking sources of knowledge (holder and type) available for solving problems” significantly ($\beta=.187$, $p<0.01$; $\beta=.064$, $p<0.10$; $\beta=.252$, $p<0.01$; $\beta=.145$, $p<0.01$) linked with performance. Further, coefficients’ value suggests that KAP4 and KAP1 more significantly affect the performance of banks relatively to others. However, KAP3 and KAP5 are not significantly connected with overall performance of banks.

Table 5.78 Multiple Regression Analysis to Find the Effect of Knowledge Application on Overall Performance of Banks

Dependent variable	Independent variable					
	KAP1	KAP2	KAP3	KAP4	KAP5	KAP6
Overall Performance	.187*	.064***	-.035	.252*	.033	.145*
t-statistics	5.132	1.671	-1.042	5.542	.780	3.610
Adjusted R ²	0.245					
F-statistics	44.869*					

*, ** and *** represents the significance level at 1%, 5% and 10% respectively

5.10.11. Individual Effect of Human Capital Practices on Overall Performance of Banks

Table 5.79 exhibits the results of multiple regression analysis to find the individual effect of mediating variable (i.e. human capital practices) on dependent variable (i.e. overall performance) of banks. Adjusted R² illustrates that 25.4% variation in overall performance of banks is the result of change in independent variable (i.e. human capital practices). Results found that out of four items of human capital practices, items i.e. (HCP1) “employees hold suitable work experience for accomplishing their job

successfully”, (HCP2) “employees have excellent professional skills in their particular jobs and functions” and (HCP4) “employees are creative” have positive and statistical significant ($\beta=.196$, $p<0.01$; $\beta=.204$, $p<0.01$; $\beta=.219$, $p<0.01$) impact on overall performance of banks. Further, F-statistics (69.806) reveals that joined effect of all the four items of human capital practices is also significant.

Table 5.79 Multiple Regression Analysis to Find the Effect of Human Capital Practices on Overall Performance of Banks

Dependent variable	Independent variable			
	HCP1	HCP2	HCP3	HCP4
Overall Performance	.196*	.204*	.044	.219*
t-statistics	4.900	4.688	1.332	5.950
Adjusted R ²	0.254			
F-statistics	69.806*			

*, ** and *** represents the significance level at 1%, 5% and 10% respectively

5.10.12. Individual Effect of Structural Capital Practices on Overall Performance of Banks

The results of multiple regression analysis are presented in table 5.80 to find the individual effect of mediating variable (i.e. structural capital practices) on dependent variable (i.e. overall performance) of banks. Adjusted R² explains 33% variation in overall performance of banks and F-statistic reveals that combined effect of all the seven items of structural capital practices is also significant. Further, results illustrate that out of six structural capital practices, five practices i.e. (SCP1) “overall operations procedure of our company is very efficient”, (SCP2) “company responds to changes very quickly”, (SCP3) “company has an easily accessible information system”, (SCP4) “culture and

atmosphere are flexible and comfortable” and (SCP6) “there is supportive among different departments” have positive and statistical significant ($\beta=.139$, $p<0.01$; $\beta=.224$, $p<0.01$; $\beta=.088$, $p<0.05$; $\beta=.189$, $p<0.01$ $\beta=.109$, $p<0.01$) relationship respectively with overall performance of banks. Further, coefficients’ value suggests that SCP2 and SCP4 more significantly affect the performance of banks relatively to others. However, SCP5 is not significantly influence the performance of banks.

Table 5.80 Multiple Regression Analysis to Find the Effect of Structural Capital Practices on Overall Performance of Banks

Dependent variable	Independent variable					
	SCP1	SCP2	SCP3	SCP4	SCP5	SCP6
Overall Performance	.139*	.224*	.088**	.189*	-.011	.109*
t-statistics	3.740	5.830	2.528	5.535	-.266	2.704
Adjusted R ²	0.330					
F-statistics	67.384*					

*, ** and *** represents the significance level at 1%, 5% and 10% respectively

5.10.13. Individual Effect of Relational Capital Practices on Overall Performance of Banks

The results of multiple regression analysis are presented in table 5.81 to find the individual effect of mediating variable (i.e. relational capital practices) on dependent variable (i.e. overall performance) of banks. Adjusted R² explains 25% variation and F-statistic reveals that combined effect of all the four practices is also significant. Further, results illustrate that all the practices significantly ($\beta=.232$, $p<0.01$; $\beta=.075$, $p<0.10$; $\beta=.303$, $p<0.01$; $\beta=.109$, $p<0.01$) determine the overall performance of banks. However, the value of coefficients suggests that RCP1 (Solves problems through effective

collaboration) and RCP3 (excellent suppliers) more significantly influence the performance of banks relatively to others.

Table 5.81 Multiple Regression Analysis to Find the Effect of Relational Capital Practices on Overall Performance of Banks

Dependent variable	Independent variable			
	RCP1	RCP2	RCP3	RCP4
Overall Performance	.232*	.075***	.303*	.109*
t-statistics	6.299	1.843	7.285	2.637
Adjusted R ²	0.250			
F-statistics	68.278*			

*, ** and *** represents the significance level at 1%, 5% and 10% respectively.

5.82 Summary of Results of Hypotheses

Hypotheses		Results
H1a	Explicit knowledge sharing practices positively associated with system oriented strategy.	Supported Appendix (E)
H1b	Explicit knowledge sharing practices positively associated with human oriented strategy.	Supported Appendix (E)
H1c	Explicit knowledge sharing practices positively associated with technology.	Supported Appendix (E)
H1d	Explicit knowledge sharing practices positively associated with decentralization.	Not Supported Appendix (E)
H1e	Explicit knowledge sharing practices positively associated with formalization.	Supported Appendix (E)
H1f	Explicit knowledge sharing practices positively associated with organizational culture.	Supported Appendix (E)
H1g	Explicit knowledge sharing practices positively associated with knowledge acquisition.	Supported Appendix (E)
H1h	Explicit knowledge sharing practices positively associated with knowledge protection.	Supported Appendix (E)
H1i	Explicit knowledge sharing practices positively associated with knowledge conversion.	Supported Appendix (E)
H1j	Explicit knowledge sharing practices positively associated with knowledge application.	Supported Appendix (E)
H1k	Explicit knowledge sharing practices positively associated with human capital practices.	Supported Appendix (E)
H1l	Explicit knowledge sharing practices positively associated with structural capital practices.	Supported Appendix (E)

H1m	Explicit knowledge sharing practices positively associated with relational capital practices.	Supported Appendix (E)
H2a	Tacit knowledge sharing practices positively associated with system oriented strategy.	Supported Appendix (E)
H2b	Tacit knowledge sharing practices positively associated with human oriented strategy.	Supported Appendix (E)
H2c	Tacit knowledge sharing practices positively associated with technology.	Supported Appendix (E)
H2d	Tacit knowledge sharing practices positively associated with decentralization.	Not Supported Appendix (E)
H2e	Tacit knowledge sharing practices positively associated with formalization.	Supported Appendix (E)
H2f	Tacit knowledge sharing practices positively associated with organizational culture.	Supported Appendix (E)
H2g	Tacit knowledge sharing practices positively associated with knowledge acquisition.	Supported Appendix (E)
H2h	Tacit knowledge sharing practices positively associated with knowledge protection.	Supported Appendix (E)
H2i	Tacit knowledge sharing practices positively associated with knowledge conversion.	Supported Appendix (E)
H2j	Tacit knowledge sharing practices positively associated with knowledge application.	Supported Appendix (E)
H2k	Tacit knowledge sharing practices positively associated with human capital practices.	Supported Appendix (E)
H2l	Tacit knowledge sharing practices positively associated with structural capital practices.	Supported Appendix (E)
H2m	Tacit knowledge sharing practices positively associated with relational capital practices.	Supported Appendix (E)
H3a	System oriented strategy positively associated with overall performance of banks.	Supported Appendix (E)
H3b	Human oriented strategy positively associated with overall performance of banks.	Supported Appendix (E)
H4a	Technology positively associated with overall performance of banks.	Supported Appendix (E)
H4b	Decentralization positively associated with overall performance of banks.	Supported Appendix (E)
H4c	Centralization conversion positively associated with overall performance of banks.	Supported Appendix (E)
H4d	Organizational culture positively associated with overall performance of banks.	Supported Appendix (E)
H5a	Knowledge acquisition positively associated with overall performance of banks.	Supported Appendix (E)
H5b	Knowledge protection positively associated with overall performance of banks.	Supported Appendix (E)
H5c	Knowledge conversion positively associated with overall performance of banks.	Supported Appendix (E)

H5d	Knowledge Application positively associated with overall performance of banks.	Supported Appendix (E)
H6a	Human capital practices positively associated with overall performance of banks.	Supported Appendix (E)
H6b	Structural capital positively associated with overall performance of banks.	Supported Appendix (E)
H6c	Relational capital positively associated with overall performance of banks.	Supported Appendix (E)
H67	Explicit knowledge sharing practices positively associated with overall performance of banks.	Supported Appendix (E)
H8	Tacit knowledge sharing practices is positively associated with overall performance of banks.	Supported Appendix (E)

CHAPTER SIX: DISCUSSION OF THE STUDY

The foremost objective of conducting this study is to uncover the underlying relationship of knowledge sharing practices on overall performance of banks which is rigorously debated in different contexts (Carr and Kaynak 2007; Matthew and Sternberg, 2009; Gao *et al.*, 2009; McAdam *et al.*, 2012 ;Wang and Wang, 2012; Wang *et al.*, 2014). Using the theoretical lenses of KBV which is the extension of RBV, a mediating model is proposed and tested to bridge the significant gap. Therefore, findings of the study uncovering that how the knowledge sharing practices contributes to overall performance of banks through mediation of critical success factors of knowledge management. This chapter presents the extensive discussion based on the findings of the study to provide the

sufficient justifications about the nature of relationships with the help of sound theoretical foundations. Further, this chapter covers the entire components as identified in findings of the study to make sure the conformity or dis-confirmatory of results with the previous studies based on strong theoretical premises.

The structure of this chapter is as follows: Section 6.1 presents the discussion on the findings of the study related to knowledge sharing, knowledge management strategy and performance, Section 6.2. Discusses the knowledge sharing practices, knowledge management capability and performance, Section, 6.3 presents the discussion on knowledge sharing practices, knowledge process capability and performance and Section 6.4 encapsulate the discussion related to knowledge sharing practices, intellectual capital practices and performance of banks

6.1. Knowledge Sharing, Knowledge Management Strategy and Performance

6.1.1. Explicit Knowledge Sharing Practices, Knowledge Management Strategy and Performance

With respect to direct and mediating effect of explicit knowledge sharing practices, knowledge management strategy (i.e. system and human oriented strategy) and performance, the results suggest that there is a direct positive and significant effect of explicit knowledge sharing practices on system oriented strategy ($\beta=.125$; $p<0.01$), human oriented strategy ($\beta=.071$; $p<0.05$) and performance ($\beta=.201$; $p<0.01$). It has been

found that KM strategies (both system and human oriented) partially and significantly mediate the relationship between explicit knowledge sharing practices and banks' performance (See table 5.12 and 5.14). The results indicate that direct effect of explicit KS practices on performance is consistent with past studies (Carr and Kaynak 2007; Wang and Wang 2012). To bridge the significant gap, we developed the mediating model based on theoretical lenses of RBV and KBV and found that explicit knowledge sharing not only directly influence the banks performance but also indirectly (partially) influence the banks performance through strengthening the knowledge management strategies.

This submits evidence that business value is extensively based on explicit KS practices and two components of knowledge management strategy (Choi and Lee 2002; Lawson *et al.*, 2009; Carr and Kaynak 2007; Wang and Wang 2012). The analysis related to direct effect of explicit KS practices on banks performance reveals that out of five explicit KS practices, the practice of “employees frequently collect reports and official documents from others at their workplace” (EKSP2) positive ($\beta=.281$) and significantly related with performance. Likewise, “employees are frequently encouraged by knowledge sharing mechanisms” (EKSP3) and “employees are frequently offered a variety of training and development programs” (EKSP4) are also positively ($\beta=0.057$; $\beta=0.047$) related with overall performance of banks but that relationship is not statistical significant. However EKSP1 and EKSP5 are inversely related with performance where EKSP1 significantly related with performance. Nevertheless, among aforementioned practices, the practice (EKSP2) related to “employees frequently collect reports and official documents from others at their workplace” played more significant role ($\beta=.281$;

$p < 0.01$) in determining the banks' performance. However, with respect to combined effect of explicit KS practices on performance (See Appendix E), results indicates that explicit KS practices positive ($\beta = .201$) and significantly ($p < 0.01$) related with performance. One possible explanation of above results may be when formal practices are linked with performance, employee endeavor to share the knowledge related to business processes which enable the management to solve the identified crucial issues regarding the product quality improvement, reduction is operation cost and innovation. Therefore, it is expected that formal KS practices tends to improve the both operational and financial performance. These findings underpin the arguments of Wang and Wang (2012) and Wang *et al.*, (2014) who state that formal KS practices consolidate the financial and operational performance of organization through sharing knowledge relating to business processes which further help to increase the productivity and quality of products and services (McAdam *et al.*, (2012) thus providing the competitiveness (Gao *et al.*, 2009; Reus *et al.*, 2009). The results of the study also in align with van den Hooff and De Ridder (2004) who suggested that explicit flow of knowledge significantly affects financial performance through improving dependability of delivery processes.

Similarly, research also indicates that banks need to integrate and expand knowledge sharing by investing in trainings courses, conferences, seminars, acquiring technologies and hiring professionals which assist in determining the future course of actions, thus enables employees' to improve their abilities through organizational engagement for superior organization performance (Wang *et al.*, 2014). Therefore, the results suggest that banks extensively need to develop different knowledge sharing

mechanism just like sufficient training and development programs and establishment of IT mechanisms.

Prior discussion related to direct relationship of explicit KS practices with knowledge management strategies (i.e. system and human oriented strategy) and further knowledge management strategies with performance, the results capture the positive ($\beta=.125$, $p<0.01$; $\beta=0.071$, $p<0.05$) and significant relationship of explicit KS practices with system and human oriented strategy and as well with performance outcomes (See Appendix E). However, in case of individual effect of system oriented strategy on performance the results suggest that all items of system oriented strategy significantly influence in determining the performance (See Table 5.44). However, SOS1 contributes ($\beta=.269$) more to determine the performance of banks. One possible explanation may be expected in this discourse that when the organization possess well-structured knowledge know-how procedures and systems and as well formal integration of manuals and meeting documents that not only influence the operational performance but also improve the financial outcomes. Therefore, this suggests that system oriented strategy not only directly influence the performance but also helps to consolidate the KS-driven performance. The reason behind is that employees in organization tends to share formal knowledge which is embedded in documents form.

Likewise, human oriented strategy significantly influences the performance of banks (See Appendix E). Whereas, in case of individual effect of human oriented strategy, it is observed that two out of three items of human oriented strategy significantly encourage

the performance of banks. Further, results indicate that (HOS3) contributes ($\beta=.305$; $p<0.01$) more in determining the performance of banks (See Table 5.44). Therefore, it may be anticipated that increased human interactions in form of formal conversations and meetings etc. are important ways to share the explicit knowledge to support the daily management activities and thus provides the unique way to solve the problems. Consequently, analysis reveals that both system and human oriented strategy performs mediating role in explaining explicit KS-driven performance. These findings are also consistent with Bierly & Chakrabarti, (1996) and Choi and Lee (2002) who found that KM strategies help to identify and capture the knowledge and then later its' sharing to improve corporate performance. Research suggests that knowledge processes and knowledge management strategies are essential for knowledge management (Choi and Lee, 2002). KM strategies are also important because without it, implementation of knowledge processes and later knowledge sharing is difficult and costly (Soliman and Spooner, 2000). Further, despite a great deal of research focused in exploring the relationship between KM strategies and corporate performance, but still there is a lack of research in defining the mediating role of KM strategies for KS-driven performance. For this exploration, this study attempts to investigate the mediating role of two KM strategies (i.e. system and human oriented strategy). The results of the study found that system oriented strategy tends to create, store and share documented knowledge is positively associated with performance which is consistent with the studies of (Davenport *et al.*, 1998; Swan, Newell and Robertson, 2000; Lee and Kim, 2001). Therefore, this study supports the findings of Choi and Lee (2000) who suggested that system strategy is

quite effective for explicit knowledge sharing. Second dimension regarding human oriented strategy, the results suggests that more the interpersonal interaction more the tendency to share knowledge, thus consistent with (Swan *et al.*, 2000; Hanson *et al.*, 1999). Previous research indicates that human oriented strategy only suitable for tacit knowledge sharing practices (Polanyi, 1997; Nonaka and Takeuchi, 1995). However, this study consolidates the findings of Kidd (1998) who found that human oriented strategy can be used for explicit knowledge sharing. Similarly, found by Nonaka and Takeuchi, (1995) in most Japanese firms while transforming corporate vision into operationalized business units or physical products is the example of tacit knowledge transformation into explicit knowledge and human oriented strategy such person to person interaction is used for that knowledge transformation. Finally, based on above discussion, it may be concluded that effective knowledge management and its' sharing is guided by KM strategies which positive influence the explicit KS-driven performance.

6.1.2. Tacit Knowledge Sharing Practices, Knowledge Management Strategy and Performance

The results support the direct relationship of tacit knowledge sharing practices, knowledge management strategy and overall performance of banks. Results confirm that knowledge management strategy mediates the relationship between tacit knowledge sharing and performance. So far the direct relationship of tacit knowledge sharing practices reveals positive ($\beta=0.441$) and statistical significant ($p<0.01$) relationship with overall performance of banks. It also postulates that tacit knowledge sharing practices

relatively more significantly influence the performance of banks as compare to explicit KS practices (See Appendix E). However, with respect to individual effect of all tacit KS practices, the results demonstrate that all the seven practices significantly influence the performance of banks (See Table 5.43). Nevertheless, results also postulate that (TKSP6) “sharing of lessons from past failure” more significantly contributes in determining the performance of banks. One of the possible reasons in context of the study may be that knowledge which comes through formal ways (i.e. meetings and official documents) and informal ways (i.e. experience, skills and expertise) resides in the minds of people and they share with each other when they have dialogues, social network and person-to-person contacts or interactions. Such informal sharing of knowledge tends to help the employees in problem solving through unique way, improves the product quality and service and as well reduces the operational cost. So, it may be postulated that tacit knowledge is a source for employees to share past failures in order to improve their future of course of actions. This finding of the study is also consistent with previous studies who found that tacit KS practices significantly influence the performance outcomes (Down, 2001; Akbar, 2003; Matthew and Sternberg, 2009; Du *et al.* 2007; Wang *et al.*, 2014). The results of the study also support the KBV notion which assumes that tacit knowledge sharing bring the source of competitiveness to support the daily management activities and consistent with the findings of (Gourlay, 2002).

With respect to mediating role of system oriented strategy, the results suggest that system oriented strategy completely mediates the relationship between tacit KS practices and banks performance (see table 5.36). These results provide the considerable support to

the findings of Choi and Lee (2002) who found that system oriented strategy (e.g. video conferences, virtual reality, telecommunications and intranet) can be employed for facilitation of tacit knowledge. Similarly, researchers (e.g. Liebowitz, 2001; Malhotra, 2000; Cross and Baird, 2000) also demonstrate that employees may share their tacit knowledge like experiences, expertise and thoughts over the web.

However, in case of mediating role of human oriented strategy, results confirm that human oriented strategy partially mediates the relationship between tacit KS practices and overall performance of banks (see table 5.38). Previous research outlines that human oriented strategy more suitable for tacit knowledge sharing practices (Polanyi, 1997; Nonaka and Takeuchi, 1995; Swan *et al.*, 2000). However, this research supports the argument and suggests that more the informal conversation or socialization among employees, the more tendency to share the tacit knowledge (Nonaka and Takeuchi, 1995) which may eventually improve the performance. Hence, it is concluded that human oriented strategy partially mediates the relationship between tacit KS-driven performances. These results set the evidence that human formal and informal interaction is very important to share the right knowledge at the workplace. Previous research found that organization should follow the one strategy while the other to support it (Hansen *et al.*, 1999). Whereas other research argue that human oriented strategy is more suitable compare to system oriented (Swan *et al.*, 2000). Focused view suggests that organization should use one strategy (Hansen *et al.*, 1999; Swan *et al.*, 2000). In contrast, balanced view intends that organization should maintain a right balance between two strategies (Bierly and Chakrabarti, 1996; Jordon and Jones, 1997; Zack, 1999). Whereas, dynamic

view proposes that selection of KM strategies depend upon nature of knowledge and its' characteristics. However, the results of study confirm that both system and human oriented strategies significantly mediates the relationship between tacit KS practices and banks performance therefore, this study recommends that both balanced and dynamic view may be more suitable particularly in context of this study.

6.2. Knowledge Sharing Practices, Knowledge Management Capability and Performance

6.2.1. Explicit Knowledge Sharing Practices, Knowledge Infrastructure Capability and Performance

In previous discussion the results confirm that explicit knowledge sharing practices positive and significantly influence in determining the overall performance of banks (See Appendix E). Consistent with expectations, this study provides strong empirical support that all constructs of knowledge infrastructure capability (i.e. technology, decentralization, centralization and organizational culture) significantly ($\beta=0.506$, $p<0.01$; $\beta=0.101$, $p<0.01$; $\beta=0.405$, $p<0.01$; $\beta=0.498$, $p<0.01$) influence in determining the overall performance of banks (See Appendix E). Prior research admits that effective and supportive knowledge infrastructure is essential for knowledge management initiatives (Gold *et al.*, 2001; Paisittanand *et al.*, 2007) and technology is one of it. This study uses the three items for technology and finds that all the three items significantly influence the performance of banks (See Table 5.46). However, T3 relatively contributes ($\beta=.324$) more in determining the performance of banks.

With respect to mediating role of technology in defining the explicit KS-driven performance, the results find that technology partially mediates relationship between explicit knowledge sharing practices and banks' performance (See Table 5.16). It suggests that appropriate technology infrastructure is indispensable for explicit knowledge sharing as well to enhance the performance thus leads to competitive advantage (Powell and Dent-Micallef, 1997; Clemons and Row, 1991). Nevertheless, past studies found inconclusive results to find any significant relationship of technology with performance (Webb and Schlemmer, 2006; Powell and Dent-Micallef, 1997; Mills and Smith, 2010). However, this study finds that information technology (IT) enables the organization for safe keeping of knowledge and as well in knowledge identification and sharing. Further, results of the study support that technology is inevitable for the process of other knowledge resources i.e. knowledge acquisition and knowledge application which may themselves influence the performance outcomes (Seleim and Khalil, 2007).

Organizational structure refers to hierarchical structure, rules and regulations and reporting relationship among organizational actors towards organizational effectiveness (Herath, 2007). This study considers two important dimensions of organizational i.e. decentralization and formalization. The results of study reveal that both decentralization and formalization positive influence the performance of banks (See Appendix E). Results also indicate that formalization ($\beta=.405$) is more significantly influence the performance of banks compares to decentralization ($\beta=.101$). However, while testing the impact of explicit KS practices on decentralization and formalization through simple regression, the study provides interesting results and finds that decentralization is not significantly linked

with explicit KS practices, whereas explicit KS practices significantly linked with formalization (See Appendix E). However, prior research suggests that decentralization (i.e. empowerment or delegation of powers) assists in knowledge sharing (Hurley and Green, 2005). Researchers (e.g. Nonaka and Takeuchi, 1995; Grant, 1996; Gold *et al.*, 2001; Beveren, 2003) also demonstrate that organizational structure, such as moving from formalization (hierarchical) to decentralization (flatter networked forms) are inevitable for knowledge creation and sharing. The findings of the study do not provide the support to the propositions of (Hurley and Green, 2005; Nonaka and Takeuchi, 1995; Grant, 1996; Gold *et al.*, 2001). One of the possible reasons for this unexpected result may be that banks which are operating in Pakistan rigorously follow written rules and regulations covered by formal procedures. Therefore, decentralization may not be an effective tool for sharing of explicit knowledge.

Contrary to decentralization, results reveal that there is positive and significant relationship between explicit KS practices, formalization and performance. With respect to isolated effect of formalization on overall performance of banks, the results reveal that three out of four items of formalization significantly influence the performance of banks, however, “activities covered by formal procedures” more significantly ($\beta=.257$, $p<0.01$) influence in determining the overall performance of banks (See Table 5.48). In case of individual effect of explicit KS practices on formalization, practice “employees frequently collect reports and official documents from others in their work” more significantly influences the formalization (See Table 5.40). So far the mediating role of formalization in determining explicit KS-driven performance, the results are consistent

with (Hurley and Green, 2005; Nonaka and Takeuchi, 1995; Grant, 1996; Gold *et al.*, 2001) and postulates that formalization partially mediates the relationship between explicit KS practices and overall performance of banks. One of the possible reasons may be that banks' employees have tendency to follow typical written rules and regulations which are covered by formal procedures rather than decentralization, therefore, formalization partially mediates the underlying relationship.

Third important component of knowledge infrastructure is organizational culture. It is very important component to implement the knowledge initiatives. It determines the organizational ability to learn, develop and share knowledge (Turban *et al.*, 2005). Positive changes in organizational helps to add momentum in knowledge initiatives and thus expected to positively influence the organizational performance (Richert, 1999). With regard to relationship between explicit KS practices, organizational culture and performance, results demonstrate that organizational culture significantly ($\beta=.498$, $p<0.001$) influence the overall performance of banks (See Appendix E). Individual analysis of organizational culture reveals that items, employees' amount of collaboration, helpfulness, willingness to accept the responsibility for failure, trustworthy and reciprocal faith in other members 'commitment to the organization appear to be significant factors in determining the overall performance of banks (See Table 5.49). However, item "OC2" is the most significant ($\beta=.174$, $p<0.01$) factor in determining the overall performance of banks. This can be interpreted that more the positive changes in organizational culture significantly improves the organizational performance, thus confirm the findings of (Richert 1999; Bhatt 2001; Sin and Tse 2000).

Further, the analysis of individual effect of explicit KS practices on organizational culture reveals that three practices i.e. “employees frequently collect reports and official documents from others at their work found to be significant with organizational culture (See Table 5.38). It can be postulated from results that organizational culture is knowledge embedded and positive changes in culture assist in knowledge management initiatives e.g. ability to develop, protect and share the knowledge, ability to encourage continuous learning and ability to encourage R&D in the organization (Marques and Simon 2006; Zack, Mckeen and Singh 2009; Mills and Smith 2010). The results confirm that organizational culture partially mediates the relationship between explicit KS-driven performance which is in agreement with previous studies who found that organizational culture stimulates in knowledge development, digestion and intra dispersion (Zahra and George 2002; Schein, 1990). Further, results also consistent with Alavi & Leidner, (2001) and suggest that more collaboration across organizational units induce knowledge people to share formal knowledge that may positively influence the performance of firms.

With respect to relationship between tacit knowledge sharing practices, decentralization, formalization and performance, the hypothesized relationship reveals that tacit KS practices significantly associated with formalization and overall performance of banks, thus supporting (H2e) and (H8). On the other hand, the results postulates that decentralization is insignificantly associated with tacit KS practices, hence; this relationship does not support the hypothesis H2d and consistent with researches (Moenaert *et al.*, 2000; Cramton, 2001; McDonough *et al.*, 2001; Cramton, 2001). One possible reason may be that banks normally follow centralized (formalized or

standardized structures) to the transfer both explicit and tacit knowledge across organizational units (Simonin 1999). Therefore, the results provide substantial support to prior research who suggests decentralization or dispersed collaboration may increase the difficulty or create inability to share knowledge among organizational actors (Cramton, 2001). Second, organizations with more integrated structure believe that utilization of less formalized or standardized practices for both tacit and explicit knowledge sharing is expensive and time consuming and third, decentralization results unclear roles and responsibility, make more difficult to identify, who are the employees responsible for certain specific tasks and decisions and further to whom to report. Therefore, such vague organizational structure creates problems to share knowledge among organizational members, thus decentralization does not mediate the relationship between tacit KS practices and overall performance of banks.

Although it is admitted that KS practices cater numerous benefits to both individuals and organization in terms of performance (Davenport and Prusak, 1998; Yi, 2009; Kalling, 2007), but people are reluctant to share knowledge. Prior research identified and cited number of problems where organizational culture is one of the major issues (Davenport and Prusak, 1998; Al-Alawi *et al.*, 2007; McDermott and O'Dell, 2001). Therefore, in view of organizational culture as a critical issue in knowledge sharing, this study attempts to investigate the mediating role of organizational culture in KS-driven performance. To confirm the direct and mediated relationship of tacit KS practices, organizational culture and performance of banks, this study attempts to test the hypothesized model. Although previous discussion highlights that organizational culture

positively influence the overall performance of banks and thus suggests that positive changes in organizational significantly augment the performance of banks consistent with other studies (e.g. Richert 1999; Bhatt 2001; Sin and Tse 2000). However, in case of direct effect of tacit KS practices, the analysis reveals that tacit KS practices significantly ($\beta=.602$; $p<0.01$) influence the organizational culture. The results also highlights that organizational culture captures more affect from tacit KS practices compare to explicit KS practices. Based on above results it can be ascertained that most of the knowledge in the organization is available in tacit form (Mooradian, 2005; Smith, 2001; Buckman, 2004). Similarly, results also reveal that tacit knowledge more significantly explain the relationship with organization culture than explicit knowledge consistent with the findings (Smith, 2001; Suppiah and Sandhu, 2010) who posits that positive changes in organizational culture assist in tacit KS-driven performance. Thus findings provide substantially support to the notion of Smith, (2001) who reports that 90 percent of knowledge in organization is tacit knowledge resides in the minds of people and thus positive changes in organizational culture enable the people to share their tacit knowledge willingly.

6.2.2. Tacit Knowledge Sharing Practices, Knowledge Infrastructure Capability and Performance

In earlier discussion, the analysis of direct and individual effect of tacit KS practices on overall performance of banks reveals that tacit KS practices positively influence the performance of banks. Results also indicate that all the components of knowledge infrastructure capability (i.e. technology, organizational structure and organizational culture) are positively linked with overall performance outcomes. Similarly, tacit KS practices reveal significant ($\beta=.522$, $p<0.01$; $\beta=.266$, $p<0.001$; $\beta=.602$, $p<0.01$) relationship with all the components of knowledge infrastructure capability (i.e. technology, formalization, organizational culture) except decentralization ($\beta=0.033$, $p>0.10$). Results also indicate that technology, formalization and organizational culture have more significant relationship with tacit KS practices as compare to explicit KS practices. Further results also confirm that organizational culture capture relatively more significant effect from tacit KS practices (See Appendix E). Thus results are consistent with the findings of (Alavi & Leidner, 2001; Gold *et al.*, 2001; Paisittanand *et al.*, 2007; Zahra and George 2002; Schein, 1990; Mckeen and Singh 2009; Mills and Smith 2011; Turban *et al.*, 2005; Nonaka and Takeuchi, 1995; Grant, 1996).

However, with respect to individual effect of tacit KS practices on technology, the results postulates that all the tacit KS practices positive and significantly influence the technology (shown in table 5.40). The practices TKSP1, TKSP2, TKSP5 and TKSP6 significantly ($\beta=.073$, $p<0.05$, $\beta=.132$, $p<0.01$; $\beta=.184$, $p<0.01$; $\beta=.201$, $p<0.01$) linked

with technology. The results provide considerable support to the findings of Ngoc, (2005) who found that information technology supports the organizational actors to communicate, collaborate, search and share knowledge based on their experiences. With respect to mediating role of technology in tacit KS-driven performance, this study confirms that technology partially mediates the relationship between tacit KS practices and banks performance (shown in table 5.27). Based on these results, it can be concluded that development of appropriately technology infrastructure is indispensable for knowledge management initiatives (Marwick, 2001). It also suggests that development of communication technologies (e.g. emails and video conferencing etc.) enable the employees to share their tacit knowledge within and across the units (Song *et al.*, 2001). Such communication technologies assist employees to expand their interactions for sharing embedded knowledge resides in minds of people (Kendall, 1997).

Organizational structure refers to hierarchical structure, rules and regulations and reporting relationship among organizational actors towards organizational effectiveness (Herath, 2007). This study considers two important dimensions of organizational i.e. decentralization and formalization. The results reveal that both decentralization and formalization positive influence the performance of banks (See Appendix E). Results also indicate that formalization is more significantly influences the performance of banks compares to decentralization. However, while tested the impact of tacit KS practices on decentralization and formalization through simple regression, the study provides interesting results and finds that decentralization is not significantly linked with tacit KS practices, whereas tacit KS practices significantly linked with formalization. Prior

research suggests that decentralization (i.e. empowerment or delegation of powers) assists in knowledge sharing (Hurley and Green, 2005). Researchers (e.g. Nonaka and Takeuchi, 1995; Grant, 1996; Gold *et al.*, 2001; Beveren, 2003) also demonstrate that organizational structure, such as moving from formalization (hierarchical) to decentralization (flatter networked forms) are inevitable for knowledge creation and sharing. The findings of the study do not provide the support to the propositions of (Hurley and Green, 2005; Nonaka and Takeuchi, 1995; Grant, 1996; Gold *et al.*, 2001). One of the possible reasons for this unexpected result may be that banks which are operating in Pakistan rigorously follow written rules and regulations covered by formal procedures. Therefore, decentralization might not be an effective tool for sharing of knowledge.

6.3. Knowledge Sharing Practices, Knowledge Process Capability and Performance

6.3.1.1 Explicit Knowledge Sharing practices, Knowledge Acquisition and Performance

Prior research suggests that knowledge acquisition define the absorptive capacity or refers to ability to create, identify or to acquire the knowledge (both internal and external source) to support its operations (Zahra and George, 2002; Gold *et al.*, 2001). Consistent with the notion (e.g. Smith and Mills, 2011; Song 2008; Seleim and Khalil, 2007), this study provides strong empirical support that knowledge acquisition significantly ($\beta=0.492$, $p<0.01$) influence in determining the performance of banks (See Appendix E), consequently supporting hypothesis (H5a). However, with respect to

relationship of explicit KS practices with knowledge acquisition, the results uncover that explicit KS practices are significantly associated with knowledge acquisition. This positive relationship indicates that knowledge acquisition is very important to replace the existing content of explicit knowledge thus supporting hypothesis (H1g) and consistent with the notion of (Pentland, 1995). Nevertheless, this study is the prime effort to test the mediating role of knowledge process capability in KS-driven performance, therefore results validate the proposition of Nonaka and Takeuchi (1995) and implying that knowledge acquisition partially mediates the relationship of explicit knowledge sharing practices and performance. Summing up, it may be suggested that banks create knowledge from both internal knowledge workers (employee's) (i.e. through research, observations, innovation projects, experimental and experiential learning). Although, banks acquired knowledge through external sources (e.g. customers, suppliers, competitors, market channels etc.) consistent with the concept of (Turner and Makhija, 2006). Therefore, it can be viewed as firm's 'absorptive capacity' to use its knowledge to create competitive advantage (Gold *et al.*, 2001). Consistent with expectation of Sony (2008) who viewed that knowledge creation process significantly related to organizational improvement. More importantly, formal knowledge acquisition (both internal and external source) and later its sharing improves the problem solving capabilities of the banks that tends to provide the foundation for knowledge construction which leads to superior performance outcomes.

6.3.1.2. Explicit knowledge sharing practices, knowledge conversion and performance

Consistent with the expectation, previous research implies that knowledge capture from internal and external sources needs to be converted into organizational knowledge for productive utilization (Lee and Suh, 2003). Basically knowledge is transient in nature, difficult to transform into organizational knowledge, therefore, Bhatt (2001) postulates that knowledge (e.g. in raw form) acquired from various sources must be readily converted into information and information into organizational knowledge (i.e. explicit knowledge) to take benefits from this conversion process. So far the mediating role, the results postulates that knowledge conversion is partially mediates the relationship between explicit KS practices and performance. Similarly, results reveal that knowledge conversion is positively linked with performance of banks (See Appendix E) consistent with (Lee and Suh, 2003; Bhatt, 2001) and inconsistent with the agreement of (Smith and Mills, 2011). Thus findings provide considerable support to the agreement of (e.g. Lee and Suh, 2003; Bhatt, 2001) and may be implied that banks have sufficient knowledge conversion mechanisms (e.g. competitive intelligence into actions plans, individual knowledge into organization knowledge which is acquired from internal and external sources), thus providing numerous benefits in the form of performance of banks. Consequently, it may be expected that acquired knowledge transform into explicit knowledge, which is very critical for KS oriented performance.

6.3.1.3. Explicit Knowledge Sharing Practices, Knowledge Protection and Performance

With respect to relationship of explicit knowledge sharing, knowledge protection and performance, results indicate that knowledge protection significantly ($\beta=.429$;

$p < 0.01$) influence the performance of banks (See Appendix E). The results postulate that knowledge protection is essential for effective functioning of banks, thus source of competitive advantage which leads to superior performance, therefore consistent with (e.g. Lee and Yang, 2000; Liebeskind, 1996). Banks have integrated IT systems (e.g. soft wares) to execute accounting and financial transactions, therefore, protection of knowledge include copyrights, patents, user name, passwords. Such protecting of knowledge (i.e. intellectual property rights) from illegal or inappropriate use may provide the source of competitive advantage (Liebeskind, 1996; Droge *et al.* 2003). Consequently, results are also consistent with (Lee and Sukoco, 2007) who found that protecting knowledge from inappropriate use is the source of value creation in terms of better performance outcome (Mills and Smith, 2011; Gold *et al.*, 2001).

In regard to mediating role, the results demonstrate that knowledge protection partially mediates the relationship between explicit KS practices and performance, thus consistent with Gold *et al.*, (2001) typology who suggested that more knowledge protection activities within the organization more the tendency to share explicit knowledge which is the source of value creation (Liebeskind, 1996; Droge *et al.* 2003).

6.3.1.4. Explicit Knowledge Sharing Practices, Knowledge Application and Performance

Knowledge application refers to make knowledge more relevant and active for value creation (Bhatt 2001). Based on this notion, the results find that knowledge application significantly ($\beta = .477$; $p < 0.01$) influence the performance of banks (See

Appendix E). This suggests that applying explicit knowledge to products and services by various ways such as product development and innovation, training and motivating employees for better customers' services, increasing understanding regarding business processes. Nevertheless, this may be anticipated that banks effectively apply knowledge to improve their course of actions and strategic directions, vital to improve the efficiency of banks (i.e. operational performance), customer intimacy (i.e. positive relations with customers) which in turns improve the performance of banks. Consequently, based on expectations, results postulate that knowledge application partially mediates the relationship between explicit KS practices and performance of banks.

6.3.2. Tacit knowledge Sharing Practices, Knowledge Process Capability and Performance

6.3.2.1. Tacit Knowledge Sharing Practices, Knowledge Acquisition and Performance

Above-mentioned discussion indicates that knowledge acquisition positively influence the performance of banks (Seleim and Khalil, 2007; Lyles and Salk, 1996). Appendix E, presents the results of simple regression and reveals that tacit KS practices more strongly ($\beta=.518$, $p<0.01$) influence the knowledge acquisition than explicit KS practices. No-doubt, research suggests that knowledge creation and accumulation (i.e. embedded in minds of people) is based on firm's ability or absorptive capacity to facilitate the operations of firms (Gold *et al.*, 2001). People acquire knowledge from both internal and external sources at work sites and reside in their minds for sharing. A key to acquire tacit knowledge and sharing is to access to a wide range of banks' routine

activities, to take ideas of other people and opportunities to get in involved. Given that the findings of the study, it may be expected that formation of trust and employees' proximity tends to involve them to acquire tacit knowledge and sharing among organization actors. Such initiatives motivate the employees to share tacit knowledge thus creates excellent capability for problem solving and ability to make effective decisions to harvest the better performance.

6.3.2.2. Tacit Knowledge Sharing Practices, Knowledge Conversion and Performance

According to Polanyi's "we know more than we can tell". Based on this notion, the results postulates that tacit KS practices positively contributing in measuring the performance of banks thus consistent with (Sher and Lee, 2004; Law, 2008; Du *et al.* 2007). Similarly knowledge conversion is also significantly augment the performance of banks (Lee and Suh, 2003; Bhatt, 2001). However, with regard to mediating role of knowledge conversion, results indicate that knowledge conversion partially mediates the relationship between tacit KS practices and performance. Nevertheless, the results are also contended with Nonaka and Takeuchi (1995) who propose that social interaction enables to convert tacit knowledge into explicit knowledge specifies that systematic transformation such as transformation of tacit knowledge through socialization, conversion of tacit knowledge into explicit knowledge through externalization. These practices assist to convert the tacit knowledge into explicit knowledge and later into action plans, individual knowledge embedded in minds of people into organization and well partners knowledge into organization. Tacit knowledge conversion into rational

knowledge tends to improve the production processes, product quality and customer satisfaction that turns to give momentum to financial performance of banks. Thus above discussion assumes that banks have appropriate mechanisms to convert tacit knowledge created from internal sources and acquired from external sources into a useful form to capitalize it into business operations.

6.3.2.3. Tacit Knowledge Sharing Practices, Knowledge Protection and Performance

Knowledge protection is essential for effective control within the organization. This includes the protection of knowledge within an organization from illegal or inappropriate use or theft (Gold, Malhotra and Segar's 2001). The findings of the study reveal that both tacit KS practices and knowledge protection positively contribute while assessing the performance of banks. However, with respect mediation analysis, table 5.32 presents that knowledge protection partially mediates the relationship between tacit KS practices and performance of banks. This is the unique findings which postulate that banks have processes to value and protect tacit knowledge embedded in individuals' minds. As tacit knowledge is non-codded knowledge embedded in minds of individual; although, one of the possible threats that banks may face is the loss of tacit knowledge when employees departure the organization. Therefore, banks need to look some important employees' retention strategies (e.g. proper staffing strategies, coaching, mentoring and various knowledge-sharing techniques etc.) to protection tacit, which may reduce the replacement cost which in turn, increases the firms' competitiveness and leads

to improve the performance. Furthermore, the positive relationship of tacit KS practices and knowledge protection indicate that banks also educate their employees about the types of knowledge; they should not share with their peers in other organizations which is in align with the findings of (Appleyard 1996). Finally, it may be anticipated that protection of tacit knowledge adds up to the human capital and sharing of knowledge within the organization.

6.3.2.4. Tacit Knowledge Sharing Practices, Knowledge Application and Performance

With respect to relationship of tacit KS practices, knowledge application and performance, findings indicate that tacit KS practices and knowledge application significantly contribute in defining the performance of banks. Knowledge application is basically the actual use of knowledge for creating competitiveness through developing new products, promoting alliances and organization learning with ultimate purpose to improve operational excellency that shaped better firm's performance (Gold *et al.*, 2001; Mills and Smith, 2010). In knowledge application process, "knowledge is transferred or distributed from the point of generation to the point of use, making knowledge more active and relevant for the firm in creating value" (Bhatt, 2001, pp. 72-73). In view of above discussion, the results confirm that tacit KS practices positively ($\beta=0.441$; $p<0.01$) linked with performance of banks (See Appendix E). However, so far the individual effect of tacit KS practices, all the practices significantly associated with knowledge application except (TKSP4). This suggests that most of the knowledge in organization exists in implicit (Suppiah and Sandhu, 2011), therefore, organizations acquire and apply

knowledge through various contexts (e.g. social interactions, meetings, conversations etc.). This is also important to unlock the performance from knowledge tacit (i.e. embedded in the minds of employees). This might be possible to convert the tacit knowledge into rational knowledge (i.e. formal or explicit knowledge).

6.4. Knowledge Sharing Practices, Intellectual Capital Practices and Performance

6.4.1. Explicit Knowledge Sharing Practices, Intellectual Capital Practices and Performance

6.4.1.1. Explicit Knowledge Sharing Practices, Human Capital Practices and Performance

Consistent with expectations, this study provides strong empirical support that all components of intellectual capital practices (i.e. human capital practices, structural capital practices and relational capital practices) significantly ($\beta=0.500$, $p<0.01$; $\beta=0.564$, $p<0.01$; $\beta=0.488$, $p<0.01$) contribute in determining the overall performance of banks (See Appendix E). The findings of the study uncover that how the explicit KS practices contributes in overall performance of banks through mediation of intellectual capital practices. With respect to isolated effect of human capital, structure capital and relational capital practices on overall performance of banks, the results postulate that human capital practices i.e. suitable work experience (HCP1), well-design training programs (HCP2), and employees are creative (HCP4) significantly ($\beta=0.196$, $p<0.01$; $\beta=0.204$, $p<0.01$; $\beta=0.219$, $p<0.01$) contributes to enhance the performance of banks. However, (HCP3) developing new ideas and knowledge also positively ($\beta=0.044$) contributes but that relationship is not statistically significant ($P>0.10$). Nevertheless, results also postulates that employee creativity more significantly influences the performance of banks. Our findings of the study consistent with Wang *et al.*, (2014) who suggest that employees experience, professional skills, well-design training programs, development of innovative and creative ideas and knowledge will enhance the overall performance of banks (Skaggs and Youndt, 2004; Ling and Jaw, 2006; Bontis *et al.*, 2007). Given that findings

suggest that banks with knowledgeable individuals, excellent capability for problem solving and ability to make effective decisions help to improve the performance are the source of competitive advantage thus consistent with other studies (Mengistae, 2000; Bontis *et al.*, 2007; Campbell *et al.*, 2012). Based on results, it can be expected that quality of products and services help to improve the operational performance of banks which is deeply concern with human capital efficiency (Cabello-Medina *et al.*, 2011), thus human capital is one of the important aspect of IC and firms grasped its significance through improving human capital efficiency to enjoy better performance outcomes (Le Blanc *et al.*, 1998; Bontis, 1998; Wang *et al.*, 2011; Seleim *et al.*, 2007; Ling and Jaw, 2006; Youndt *et al.*, 2004; Martinez-Torres, 2006). Therefore, hypothesis H6a is supported.

With respect to relationship between explicit knowledge sharing practices and human capital practices, findings of the study show that explicit KS practices significantly ($\beta=0.201$; $p<0.01$) influence the performance of banks (See Appendix E). However, in case of individual effect of explicit KS practices on human capital practices, the results indicate that EKSP2 and EKSP4 i.e. “frequently collect reports and official documents from others at their work” and “frequently offered a variety of training and development programs” are significantly associated ($\beta=.214$; $P<0.01$ and $\beta=.105$, $P<0.01$) with human capital practices. Further, results also reveal that investment on IT systems for knowledge sharing significantly ($P<0.05$) but inversely ($\beta= -.116$) related with human capital practices. It can be concluded that explicit KS practices improves performance and learning of employees when they interact with each other for explicit knowledge

sharing hence consistent with other studies (Huysman and de Wit, 2004; Chao *et al.*, 2011). Thus, findings provide substantial support to the agreement of (Spender and Marr, 2006; Hsu, 2008) who found that knowledge sharing help to nourish human capital, therefore hypothesis H1k is supported. Further, results are corroborating with previous studies (Wang *et al.*, 2014), which indicate that human capital practices are one of the important ingredient of intellectual capital practices which partially mediates the relationship between explicit KS practices and performance of banks (See Table 5.30).

6.4.1.2. Explicit Knowledge Sharing Practices, Structural Capital Practices and Performance

The results presented in (Appendix E) indicates that structural capital practices significantly ($\beta=.564$; $p<0.001$) contributes in determining the overall performance of banks. This provides considerable support to researches (e.g. Martinez-Torres, 2006; Youndt *et al.*, 2004; Zangoueinezhad and Moshabaki, 2009; de Pablos, 2004; Phusavat *et al.* 2011) and postulates that effective structural capital provides considerable support to working processes/procedures and tends to facilitate communication, problem solving, reduction in costs, improves the product quality which consequently boost the both operational and financial performance of banks.

In regard to individual effect of structural capital practices on performance, the results indicate that SCP1, SCP2, SCP3, SCP4 and SCP6 are significantly ($\beta=.139$; $p<0.01$; $\beta=.224$; $p<0.01$; $\beta=.088$; $p<0.05$; $\beta=.189$; $p<0.01$; $\beta=.109$; $p<0.01$) influenced the performance of banks. These results are consistent with Wang at al., (2014) which

indicates that efficient operations procedures, quick to respond, flexible organization culture, ease to assess the information and high tendency of collaboration bring numerous benefits in terms of both operational and financial performance. The results are also consistent with somewhat with (Zangouinezhad and Moshabaki 2009).

With respect to relationship of explicit KS practices with structural capital practices, results also indicate that explicit KS practices significantly ($\beta=.150$; $p<0.01$) influence the structural capital practices (See Appendix E). Individual analysis of explicit KS practices reveals that EKSP2 “frequently collects reports and official documents from others at their work” is significantly ($\beta=.227$; $p<0.01$) associated with structural capital. These findings are consistent with (Carmeli and Azeroual, 2009; Karagiannis *et al.* 2008) who found that KS practices institutionalize the SC of the firms. Nevertheless, findings also provide interesting insights that positive change in SC e.g. “better design and utilization of management structures” and “institutionalization of knowledge embedded in organizations structures, procedures, technology and culture” assist in formal knowledge sharing in the form of official documents and reports which are prepared and collected by colleagues. Thus, result indicate that positive improvement in SC aids in explicit knowledge sharing therefore, it may be expected that SC is an essential component of IC to mediate the relationship between explicit KS practices and performance of banks consistent with (de Pablos, 2004; Wang *et al.*, 2014).

6.4.1.3. Explicit Knowledge Sharing practices, Relational Capital Practices and Performance

Relational capital is third crucial component of intellectual capital. The analysis demonstrates that relational capital practices positively ($\beta=.488$; $p<0.01$) associated with overall performance of banks. Further findings claims that relational capital practices significantly influence the performance of banks similarly to other components of IC (See Appendix E). This indicates that by maintaining strategic alliances with stakeholders, a bank can exploit new ways of doing business, learn something new from others' experiences, reduces the transaction cost and turning to be more innovative (Dewhurst and Navarro, 2004). However, in regard to isolated effect of relational capital practices on performance of banks, results also postulates that all the practices significantly influence in determining the performance of banks (See Table 5.56). Further, it provides evidence that effective collaboration and communication, strategic interactions with customers, suppliers, partners, and stakeholders help to reduce the production cost, improves production processes and quality, boost productivity and then resultantly add momentum to overall performance outcomes (i.e. operational and financial performance) (Cousins *et al.*, 2006; Germain *et al.* 2011). The findings are also in aligning with (e.g. Zhang *et al.* 2006; Wang *et al.*, 2014) stated that relational capital is an essential determinant for evaluating operational and financial achievements, thus supporting hypothesis H6c.

Nevertheless, with respect to relationship of explicit KS practices with relational capital, the analysis reveals that both isolated and integrated explicit KS practices significantly influence the performance of banks (See Appendix E). This suggests that positive improvement in relational capital is an important source to share knowledge and

information within and outside of organization (Wang *et al.*, 2014). Such structural ties provide momentum in knowledge sharing tendency which resultantly improves the job performance of employee (Hu, 2009). Results also indicate that explicit KS practices significantly ($\beta=.147$; $P<0.01$) linked with relational capital practices (See Appendix F). Whereas, with respect to individual effect of explicit KS practices on relational capital practices, the results postulate that out of five practices EKSP2, EKSP3 and EKSP4 have weak positive relationship ($\beta=.142$; $\beta=.043$; $\beta=.080$) with relational capital practices (See table 5.39). However, EKSP2 is more significant related with RCP relatively to others.

Based on above results, it can be viewed that more the investment on RCP more the tendency to share and collect official documents within and outside of the organization. So study has unique finding which indicates that structural ties (e.g. closeness and frequent interactions) strengthens the aspects of relational capital (i.e. trustworthiness) consistent with (Carmeli and Azeroual, 2009) and inconsistent with (Wang *et al.*, 2014). It means that structural ties increase the employees' willingness to share knowledge prepared by them and embedded in the form of reports and official documents. Therefore it may be suggested that relational capital is also an important mediator for explicit KS driven performance of banks. Moreover, findings also highlights that high quality of relational capital is likely to increase the propensity of knowledge sharing.

6.4.2. Tacit Knowledge Sharing Practices, Intellectual Capital Practices and Performance

6.4.2.1. Tacit Knowledge Sharing Practices, Human Capital Practices and Performance

Prior discussion shed light that human capital practices significantly evaluates the performance of banks consistent with (Skaggs and Youndt, 2004; Ling and Jaw, 2006; Bontis *et al.*, 2007; Wang *et al.*, 2014). Similarly results also indicate that tacit KS practices positive linked with performance consistent with notion of researches (e.g. Wang *et al.*, 2014; Sher and Lee, 2004; Law, 2008; Du *et al.* 2007). However, with respect to mediating role of human capital practices with tacit KS-driven performance, the results reveal that both individual and combined effect of tacit KS significantly linked with human capital practices. It is worth mentioning that all the tacit KS practices significantly influence the human capital practices are in align with (Wang *et al.*, 2014) because it provides foundation of socialization to add the momentum in tacit knowledge sharing.

Results are much consistent with prior research (Nonaka and Takeuchi, 1995; Holste and Fields, 2010) who postulate that human experience resides in the minds and employees' willingness are key to share tacit knowledge. Further results specify that all the tacit KS practices positively influence the human capital practices, whereas TKSP1, TKSP2, TKSP5 and TKSP6 is significantly ($p < 0.01$; $p < 0.10$; $p < 0.01$; $p < 0.01$) respectively related with HCP. It is also found that learning from past mistakes more expressively influence the human capital ($\beta = 0.214$; $p < 0.01$), thus suggests that when employees perform new task, they share knowledge of their past failures which is crucial to execute their new tasks more efficiently. Nevertheless, it may be expected from findings that tacit

knowledge originates through human interactions, therefore, it a source of knowledge creation (Nonaka and Takeuchi, 1995). Hence it suggests that through sharing of tacit knowledge, human capital gets hands-on skills, distinctive experiences and learns new ways to perform better with a joint cognitive innovativeness (Bloodgood and Chilton, 2012) which supports the hypothesis H2k. Moreover, this study is in agreement with Wang *et al.*, (2014) indicates that tacit KS practices more significantly ($\beta=.443$ vs $\beta=.108$) influence the human capital practices than explicit KS practices and thus turning to be a more significant mediator in tacit KS driven performance.

6.4.2.2. Tacit Knowledge Sharing practices, Structural Capital Practices and Performance

With respect to impact of tacit KS practices and SC practices on overall performance of banks, this study highlights that both tacit KS practices and SC practices significantly explains the performance of banks thus consistent with (Down, 2001; Akbar, 2003; Matthew and Sternberg, 2009; Harold, 2008; de Pablos, 2004; Aramburu and Saenz, 2011; Zangoueinezhad and Moshabaki, 2009; Phusavat *et al.* 2011). This indicates that tacit KS practices directly influence the performance of banks in terms of efficiency of products, improves the reliability of delivery process, customer satisfaction, product quality, cost management and functionality of products. As a result, banks integrate SC in their overall business processes which not only innovative the knowledge creation process but also provides better competitive position through yielding improved quality, reduction in cost which leads to better operational performance and finally turns

to improve financial performance. In view of above notion, this study proves that tacit KS practices are significantly associated with SC practices, and turning to SC as an important mediator in tacit KS driven performance. Results also indicate that tacit KS practices have greater effect on SC practices than explicit KS practices (See Table 5.41). This suggest that tacit KS practices changes the way individuals perceive and behave through adding new content to existing structural capital (e.g. routines, cultures, procedures or learning system). Therefore, study finds that SC practices partially mediate in tacit KS driven performance.

6.4.2.3 Tacit Knowledge Sharing Practices, Relational Capital Practices and Performance

While evaluating the relationship of relational capital practices with overall performance of banks, the analysis reveals that relational capital practices are positively associated with overall performance of banks consistent with (Cousins *et al.*, 2006; Germain *et al.* 2011; Wang *et al.*, 2014). Prior discussion highlights that tacit KS practices significantly determine the overall performance of banks which is also in align with studies (e.g. Wang *et al.*, 2014; Sher and Lee, 2004; Law, 2008; Du *et al.* 2007). However, with respect to relationship of tacit KS practices with relational capital practices, this study indicates that both isolated and integrated effects of tacit KS practices significantly linked with relational capital of the banks (See Appendix E). So far isolated impact of tacit KS practices on relational capital is concerned, results reveal that five out of six practices (i.e. TKSP1, TKSP2, TKSP4, TKSP5 and TKSP6) are

significantly ($\beta=0.154$, $p<0.01$; $\beta=0.122$, $p<0.01$; $\beta=0.106$, $p<0.05$; $\beta=0.164$, $p<0.01$; $\beta=0.176$, $p<0.01$) influence the relational capital. Therefore, results set the evidence that strategic relationship with internal and external stakeholders increase the tendency to share and collect tacit knowledge embedded in the form of experience, expertise, know-where and know-whom. This suggests that relational capital is very important source to share tacit knowledge and as well source to connect internal intellectual resources with external stakeholders (Kong and Farrell, 2010; Collins and Hitt, 2006; De Clercq and Sapienza, 2006). Nevertheless, the positive relationship of tacit KS practices with RC supports the hypothesis (H2m) and also imply that embedded flow of knowledge is likely to construct the RC productively consistent with Wang *et al.*, (2014). According to table 5.37 presents that RC partially mediate the relationship between tacit KS and performance thus implying that banks actively maintained the collaborative programs and interactional dynamics for tacit KS based on mutual understanding, cohesion and trust for tacit KS-driven performance.

Chapter Summary

This chapter has encapsulated the discussion of the study based on all the components identified in the findings of the study. The overall results provide considerable empirical support to the notion of resource based view (RBV) and knowledge based view (KBV) and postulates that KS practices (i.e. explicit and implicit) significantly influence the performance of banks (Carr and Kaynak 2007; Wang and Wang 2012; Wang *et al.*, 2014; Down, 2001; Akbar, 2003; Matthew and Sternberg, 2009;

Du *et al.* 2007; Davenport and Prusak, 1998; Yi, 2009; Kalling, 2007). The results are also parallel with previous researches, suggesting that tacit KS practices more significantly influence performance of banks than explicit. According to the RBV of the organization all the critical success factors of KM serve the mediating role to strengthen the KS-driven performance. Hence the results of the study are aligning with previous study and support the theoretical perspectives of RBV and KBV which are developed and tested in western perspective.

CHAPTER SEVEN: CONCLUSION

The foremost objective of this chapter is to present the highlights of the findings of study and to draw the conclusion and implications of research to academicians and practitioners. The major findings of the study are stated in Section 7.1. The theoretical inferences extracted from the findings of the study are discussed in Section 7.2. Limitations of the study are specified in Section 7.3 and finally a potential area for future is presented in Section 7.4.

7.1. Summary of the Findings

Although in last couple of decades, knowledge based view (KBV) which is the extension of resource based view (RBV) has provided the constructed lens to realize the stock of knowledge in the firm and flow of knowledge into the firm (Decarolis and Deeds1999). The stock and flow of knowledge within and out of the organizations positively influence the performance outcomes in knowledge intensive industries whether

these are manufacturing or services concerns (Decarolis and Deeds 1999). However, researchers are still on an impulse to uncover the underlying relationship or to develop the optimal framework to explain the KS-driven performance. Scarcity of literature and dearth of proposed optimal mediating model have led the aims of this research particularly in context of South Asia, more specifically in context of banking sector of Pakistan. Realizing the important role of bankers at banks, the major objective of the study is to test the mediating role of critical success factors of KM while establishing the KS-driven performance. To achieve this objective, the theoretical lens of RBV and KBV are used to develop the mediating mechanism on KS-driven performance in banking sector of Pakistan, which is the one of the most knowledge oriented sector.

The results of direct relationship investigated postulate that selected set of KS practices (both explicit and tacit) positively affects the critical success factors of knowledge management i.e. KM strategy (human and system oriented strategy), knowledge infrastructure capital (technology, formalization, organizational culture except decentralization), knowledge process capability (knowledge acquisition, knowledge protection, knowledge conversion and knowledge application) intellectual capital practices (human capital practices, structural capital practices and relational capital practices). Similarly, all the four critical success factors of KM i.e. KM strategy, KM infrastructure, KM process capability and intellectual capital practices are positively associated with overall performance of banks. With respect to mediating role of critical success factors of KM, the empirical findings reveal that system oriented strategy, human oriented strategy, technology, formalization, organizational culture, knowledge

acquisition, knowledge protection, knowledge conversion, knowledge application, human capital practices structural capital and relational capital practices.

Consistent with previous notion, the findings of the study concludes (See Appendix F) that high-involve KS practices (i.e. explicit and tacit) should be implied in the form of combination rather than isolated in order to constitute the KS-driven performance (Choi and Lee 2002; Lawson *et al.*, 2009; Carr and Kaynak 2007; Matthew and Sternberg, 2009; Gao *et al.*, 2009; McAdam *et al.*, 2012; Wang and Wang, 2012; Wang *et al.*, 2014). Nevertheless, findings of the study also validate the notion of RBV and KBV that the appropriate development of KM strategies, KM capabilities and knowledge resources (intellectual capital) are indispensable for the favorable outcomes of KS-oriented performance at banks level.

7.2 Theoretical Implications

The present study contributes to existing literature in numerous ways. First, this study is a prime effort which has investigated and tested the comprehensive mediating model of critical success factors of KM in order to explore the more insights based on RBV and KBV. Second, this is a unique attempt in a sense that most of the studies only investigate the direct effect of a few critical success factors of KM on performance (Gold *et al.*, 2001; Mckeen and Singh 2009; Mills and Smith 2010) ignoring the role the mediating role of critical success factors of KM for KS-driven performance. Therefore, this study provides broader context while considering all the success factors of KM

which has never been addressed before more specifically in South Asian perspective in a combined framework.

As the main objective our study is to shed light that how the mediating mechanism works for KS-oriented performance. Therefore, this study contributes that most of critical success factors of KM partially mediates the relationship between KS practices (i.e. explicit and tacit) and performance of banks except decentralization in case of explicit KS practices and performance of banks. The literature on KS-driven performance is largely concentrated on manufacturing sector i.e. pharmaceutical, engineering, telecommunication and hi-tech (Bierly & Chakrabarti, 1996; Beckman, T. 1997; Marques and Simon 2006; Zack *et al.*, 2009; Salazar, *et al.* 2003; Ali *et al.* 2012; Smith, Collins, & Clark, 2005; Gold *et al.* 2001; Liu *et al.*, 2005; Zaim *et al.* 2007; Wu and Chen , 2014; Wang *et al.*, 2014), whereas investigation of the effects of KS-practices under the mediating mechanism on banking sector (one of the most knowledge oriented) has never been addressed more specifically in South Asian contexts. At the time of this dissertation, the researcher could not find any study that had been conducted under the broader context of mediating model on banking both in western and South Asian contexts. So, this is the pioneer study, providing new insights under the mediating mechanism to the body of existing literature.

As discussed above the major findings from our study uncovers that how the KS practices add momentum to overall performance of banks. To date a few studies have investigated the relationship of KS practices and performance (Wang *et al.*, 2014). To full

this gap, this study develops the theoretical model and confirmed that KS not directly influence the performance of banks but also indirectly through strengthening critical success factors of KM.

The positive relation of explicit and tacit KS practices with all mediating variable is a unique in the field of KM and IC. The findings imply that both explicit and tacit KS practices are positively linked with system and human oriented strategies. Such positive relationship provides paybacks though creating opportunities to enhance the components of KM strategy. Results also indicate that KM strategies partially mediate the relationship, thus strengthening the explicit and tacit KS driven performance. Explicit KS practices will strengthen the system oriented strategy through exchanging reports and official documents which they collect from colleagues at their workplaces through providing frequent training and development courses. Findings also provide the significant contribution to the theory of RBV and KBV and postulate that if banks have well defined technical skills, problem solving methods and documented knowledge of meetings in codified forms like manuals would substantially boost the overall performance of banks. Similarly with respect to relationship of tacit KS practices with system oriented strategy and overall performance of banks indicates that tacit KS practices will strengthen the system oriented strategy through sharing of embedded knowledge of experience, expertise, knowledge of know where or know whom and more specifically through sharing of knowledge related to past failures in order to direct the future course of actions. Based on above discussion, the findings presumed that human oriented strategy is very crucial to consolidate the KS driven performance.

Similarly, the positive relationship of explicit and tacit KS practices with human oriented strategic and overall performance banks also provides new insights in the field of KBV. Results show that explicit KS practices will strengthen the human oriented strategy through exchanging reports and official documents which they collect from colleagues at their workplaces. Findings also imply that informal conversations, meetings and one-to-one mentoring significantly boost the performance of banks. However, with respect to tacit KS practices, the results highlights that tacit KS practices will strengthen the human oriented strategy through sharing of embedded knowledge of experience, expertise, knowledge of know where or know whom and more specifically through sharing of knowledge related to past failures in order to direct the future course of actions. Results provide substantial contribution to existing literature that more encouragement of human oriented strategy will significantly mediates the relationship between explicit and tacit KS-oriented performance. Thus, this study extends the literature by providing theoretical support to the notion of RBV and KBV that system and human oriented strategy partially mediates the relationship between explicit KS practices and performance of banks, whereas system oriented strategy completely mediates the relationship between tacit KS practices and performance. Results provide contribution to body of knowledge and suggest that KM strategy is vital for KS driven performance. This partial and full mediating mechanism indicates that KS practices not only directly influence the performance but indirectly increase the performance.

This study provides novel contribution in the arenas of KBV with respect to relationship of explicit and tacit KS practices with the components of knowledge

infrastructure capability and performance of banks. Results present that technology may be an important source to collect the report and official documents and computer based training courses to share the explicit knowledge within the organization. Likewise, IT supports for the collaboration of work, for getting access to important information and finally for systematic storing of important data positively influences the performance of banks. Similarly, in case of tacit KS practices, this study offers fresh findings that effective IT support may provide foundation to share and collect the embedded knowledge of experiences, expertise and know where and know whom. Thus findings indicate that positive improvement of technology (e.g. data bases, accounting software's, emails, video conferences, virtual reality, telecommunications and intranet etc.) as a knowledge infrastructure capability will strengthen the KS-driven performance as highlighted by (Saenz et al. 2012; Teece and Augier, 2009; Dalkir, 2005; Davenport, 2007; Wiig, 2004).

The results of this study have provided support for the applicability of western theories and contexts of KS-driven performance from the perspective of South Asian and developing countries. For instance, results support the notion that KS practices developed and tested in Western perspective found to be effective when applied in settings of Pakistan. For that purpose results postulate novel settings in KBV that explicit KS practices found to be significant detrimental with formalization and organizational culture. This suggests that more the formal structure (standardized rules and procedures) the better the tendency to collect and share official reports and documents among colleagues. Similarly, results also contribute that positive and favorable changes in

organizational culture improve the tendency of employees to collect and share official document. These are novel findings in the context of the study consistent with Western perspective (Richert, 1999; Bhatt, 2001; Turban *et al.*, 2005). However, results indicate that decentralization is not significantly related with both explicit and tacit KS practices thus inconsistent with (Nonaka and Takeuchi, 1995; Grant, 1996; Gold *et al.*, 2001; Beveren, 2003). These are much reliable findings in context of banking sector and suggest that formalized structure is more preferred to share both explicit and tacit knowledge among employees rather than decentralization. So far the relationships of mediating variables (i.e. decentralization, formalization and organizational culture) are positive linked with overall performance of banks. This suggests that knowledge infrastructure positively influence the performance consistent with Gold *et al.* 2001; Paisittanand *et al.*, 2007; Smith and Mills, 2011). There are some unique findings with respect to the direct effect of individual items of decentralization, formalization and organizational culture. For instance, the decentralized item of ‘do not need to ask their supervisor before taking action’ significantly influence the performance. It means the more liberty to take action without referring to supervisor; the more would be performance of banks. The aforementioned discussion suggests that all the components of knowledge infrastructure capability underpins the KM initiatives (Paisittanand *et al.*, 2007; Davenport and Volpel, 2001), thus indicates that technology, formalization and organization culture mediates the relationship between explicit KS driven performance.

In relation to combine and individual effects of tacit KS practices with components of knowledge infrastructure capabilities and performance of banks. This

study yields useful lens to the theory of RBV and KBV. The novel findings in context of tacit KS practices and components of knowledge infrastructure capability indicate that tacit KS practices significantly linked with technology, formalization and organizational culture except decentralization. Further, technology, decentralization, formalization and organizational culture positively linked performance of banks. However, with respect to individual effects of tacit KS practices with technology, results provide noteworthy assertion that all the tacit KS practices are significantly associated with technology. This is the unique findings which indicate that effective technological infrastructure is indispensable to share embedded knowledge which resides in the minds of people. Results postulate that IT is crucial for sharing and integration of knowledge (Smith and Mills, 2011). Similarly, findings indicate that technology is significantly linked with performance which remains inconsistent with the findings of (Webb and Schlemmer, 2006; Powell and Dent-Micallef, 1997). This suggests that technology is an important mediator for tacit KS-driven performance. Similarly, in discourse of explicit KS-driven performance in presence formalization and organization culture, results are much consistent with respect to mediating role of formalization and organizational culture in determining the KS-driven performance.

In view of findings of study with respect to relationship of knowledge process capability's components with KS practices (explicit and tacit) and further with performance of banks. This study also provides some integral findings hence suggesting that explicit and tacit practices are significantly linked with knowledge acquisition, knowledge protection, knowledge conversion and knowledge application. Further

findings show that all the components of knowledge process capability are significantly associated with performance of banks, which are in agreement with (Gold *et al.*, 2001; Song 2008; Seleim and Khalil, 2007; Lee and Suh, 2003; Sarin and McDermott, 2003; Zahra and George, 2002; Lee and Sukoco, 2007). Although, the empirical relationship between knowledge acquisition, protection, conversion and application with performances have been investigated in previous studies (Gold *et al.*, 2001; Smith and Mills, 2011; Cohen and Levinthal, 1990; Lee and Sukoco, 2007). However, with respect to direct and mediating effects of components of knowledge process capability is never been investigated before. Therefore, this study provides unique contribution to the theory of KBV and suggests that all the components of knowledge process capability significantly mediate the relationship between explicit and tacit KS driven performance. Further in relation to individual effect of explicit KS practices, item ‘frequently collect reports and official documents from colleagues in their work’ significantly linked with knowledge acquisition, protection, conversion and application. Moreover, item ‘variety of training and development programs’ is only significantly linked with knowledge acquisition. Similarly, with respect to individual effect of tacit KS practices the results indicate most practices significantly influence the all the constituents of knowledge process capability.

The positive relationship of KS practices with IC practices is also new findings in the field of knowledge management in the context of study. Tested mediating model confirmed that KS practices are not only directly associated with performance but also indirectly adds to performance of banks through strengthening the IC. These findings are

consistent with (Wang *et al.*, 2014). This research submits that both explicit and tacit KS practices add more benefits to organization through strengthening the components of IC. In relation to individual and combined effects of explicit KS practices on human capital practices and further individual and combined effects of human capital practices on overall performance of banks, the underlying exploration provides significant contribution to the field of knowledge management. Significant relationship of explicit KS practices with HCP indicates that HCP will be strengthen when employees collect reports and official documents and further through training and development. These are unique findings which are somewhat consistent with (Karagiannis *et al.*, 2008; Hsu, 2008). However, in relation to direct and individual effect of HCP with overall performance of banks, research indicates that HCP significantly determined the performance. Our study findings postulate that suitable work experience, excellent professional skill and employees' creativity will enhance the overall performance of banks. These findings are in agreement of (Bontis *et al.*, 2007; Skaggs and Youndt, 2004) thus suggests that human capital is a significant mediator for explicit KS-driven performance (Wang *et al.*, 2014).

Similarly, in regard to relationship of tacit KS practices with HCP and performance of banks, the empirical findings reveal significant relationship of tacit KS practices with HCP and performance. Results indicate that tacit KS practices will enhance the human capital and performance through exchange of embedded knowledge of experience, expertise and through sharing lessons from past failures when they feel it important to align the future actions. Thus results confirmed that HCP is an important

mediator for KS driven performance, thus consistent with (Wang *et al.*, 2014; Bontis *et al.*, 2007).

In regard to empirical relationship of explicit KS practices with SCP and RCP results found that explicit KS practices will reinforce the SCP and RCP through creating opportunities to collect official reports and documents. Likewise, efficient operations procedures, high degree of adaptability, supportiveness and accessibility to information systems bring positive change in overall performance of banks. These results are somewhat in agreement with (Zangouinezhad and Moshabaki 2009; Wang and Wang, 2012; Wang *et al.*, 2014). We have also observed that positive connection with RCP in terms of effective communication, collaboration and strategic alliance with customers and partners will enhance the combined performance of banks. These are novel findings in the field of KM and IC which suggest that all the components of IC are significant mediator for explicit KS driven performance. Lastly, with respect to relationship of tacit KS practices, results postulate that SCP and RCP are significant mediators for tacit KS driven performance.

7.3. Limitations of Study

Although theoretical implications of the study yield a potential contribution in the field of RBV and KBV, but it has few inherited limitations which call for future research and directions. First, this study is confined to conventional banks from a perspective to a developing country (Pakistan) in apprehending that how KS practices determine the performance of banks in the presence of critical success factors of KM. This specific setting of the study limits the generalizability of study to other sectors. Future researchers may employ this study to Islamic banks, other hi-tech and knowledge incentive industries to get better results in context of developing countries. Second, this research only considers cross-sectional research design which prevented us to draw causality inference from this hypothesized relationship. Future researchers may employ causality inference through considering experimental or longitudinal research designs. Finally, this study provides significant contribution through examining the role of critical success factors of KM in KS-driven performance. Nevertheless, future researchers may gain better insights through exploring more KS practices and mediating variables to evaluate the KS-driven performance. Furthermore, future studies should also consider the KS barriers (e.g. organizational politics etc.) and knowledge sharing initiatives such organizational commitment, affect and cognition based trust to limit the impact of perceived cost of knowledge sharing.

7.4. Practical Implications:

Notwithstanding few limitations of study, this study provides substantial implications for stakeholders which are given below. For business and management practitioners and academicians who have huge concern with KS-driven performance, our research highlights valuable insights. First, the mediating role of critical success factors of KM suggests that banks should do more to align the KM initiatives rather than to just structure the KM activities. They have to clearly apprehend the KS practices on critical success factors of KM and performance. As different components of KM strategy, knowledge management capability and intellectual capital have a variety of impacts on banks' performance, so managers should work together to structure the appropriate mechanisms to ensure that critical success factors of KM challenged properly to attain desire performance outcomes. With respect to relationship of explicit KS practices and performance of banks, practitioners should pay more attentions towards explicit KS practices like sharing of official documents and reports, development of appropriate KS mechanisms and more specifically, training and development programs to share explicit knowledge which in turn increase the performance. In the light of findings, our study suggests that there is a dire need to investment on KM initiatives which can enhance the performance of banks. One of the strong insights this study provides to practitioners that knowledge resources not only directly contribute to performance but also performs mediating role to strengthen the KS-driven performance. Based on the findings, this study postulates that KM strategy significantly linked with explicit KS practices; however, banks' management should pay more attentions towards sharing of codified knowledge (e.g. manuals and documents) and acquisition of knowledge from coworkers and experts.

This suggest that KM strategy permeates the relationship between KS-driven performance thus confirms that system and human oriented strategy are also essential organizational resource to leverage all value creating activities.

So far the relationship of knowledge infrastructure capability for KS driven performance, this study also provides valuable insights for banks' management. Technology, decentralization, formalization and organizational culture are important knowledge infrastructures for creating and sharing of explicit and tacit knowledge. However, managers should pay too much attention to strengthen the knowledge infrastructure capabilities due to weak relationship with explicit KS practices. Decentralization is inversely related with both KS practices which may not be an important factor to influence the KS-driven performance. This may be due to that banks which are operating in Pakistan have centralized structures; therefore decentralization does not positively influence the KS practices. These findings are consistent with Park (2006). So this implies that management must emphasize on decentralized structures which may allow the organizational actors to communicate well and share job related knowledge (Jarvenpaa & Staples, 2000). Although KS practices positively linked with formalization more specifically with tacit KS practices, however, management should need to emphasize more vigilantly to make planned and written procedures, and tendency to share it that would enhance the KS-driven performance.

Another important finding of this study which can be helpful for KS-driven performance is the significance of organizational culture. Findings indicate that

organizational culture is an important KM enabler that positively influences the KS-driven performance. Therefore, it may be suggested to practitioners that positive changes in organizational culture provide effective support to knowledge related activities (e.g. sharing of job-related knowledge) through reinforcing favorable environment (Gold *et al.*, 2001). Findings also recommend that collaboration, trust and willingness are important component of organizational culture (DeTienne *et al.*, 2004). More the formal and informal collaboration, trust and willingness enhance the tendency to share knowledge to align the future directions. Undoubtedly, management should pay more consideration towards these three components which may create the conducive environment for the sharing of knowledge among organizational members (Nelson & Coopriider, 1996).

With respect to relationship of knowledge process capability for KS driven performance, the findings of the study also provide valuable insights to banks' management. It postulates that all the components of knowledge process capability significantly mediate the KS driven performance. For knowledge process capability, knowledge acquisition, knowledge protection, knowledge conversion and knowledge application significantly impacted the performance of banks. These findings are partially consistent with (Seleim and Khalil, 2007). Nevertheless, findings also shed light that all components of knowledge process capability significantly linked with both explicit and tacit KS practices. However, more investment on knowledge process capability would yield better results for KS driven performance.

Finally, for management practitioners who are more concern with IC for KS-driven performance, our research presents some fascinating insights. First, proposed mediating role of IC indicates that managers should do more rather than just structuring the appropriate KS initiatives. They have to clearly endorse the effects of IC on firms' performance among organizational members. Undoubtedly, suitable work experience, professional skill and creativity are indispensable for human capital performance. However, practitioners should deeply emphasize on above elements to obtain better results more specifically development of new ideas and knowledge that would add more momentum for KS-driven performance. The implications for this study that management should need to pay more intention to institutionalize knowledge (e.g. such as routines, procedures, and other structural capital) through the supportive infrastructure processes, databases and manuals which not only enable the human capital to function properly but it will also strengthen the explicit KS driven performance (Youndt *et al.*, 2004). The productivity of knowledge workers desire strong SC that restructures the work spontaneously to become the part of system (Drucker, 1999a). So, banks should be conscious regarding exploration and investment on SC initiatives e.g. systems and programs (succession training programs, support culture, recruitment programs etc.), R&D (continuous re-development of new products and services based on research, innovative system and procedures etc.) and intellectual property rights to smooth KS driven performance.

With respect to mediating role of relational capital in KS driven performance, the findings of the study provides constructive guidelines to mangers. The findings indicate

that relational capital positively linked with KS practices (explicit and tacit) and overall performance of banks. This suggests that potential strategic alliances with customers and partners are critical for organization to create value through linking internal knowledge resources with external knowledge resources (Collins and Hitt, 2006; Kong and Farrell, 2010). Finally, it may be directed that flow of useful information and knowledge through high quality of RC is likely to support KS driven performance (Wang *et al.*, 2014).

REFERENCES

- Al-Alawi, A.I., Al-Marzooqi, N.Y. and Mohammed, Y.F. (2007). Organizational culture and knowledge sharing: critical success factors. *Journal of Knowledge Management*, 11(2), 22-42.
- Abrahamson, E., & Fairchild, G. (1999). Management fashion: Lifecycles, triggers and collective learning processes. *Administrative Science Quarterly*, 44 (December), 708-740.
- Adler, P. S. (1999). Building better bureaucracies. *Academy of Management Executive*, 13(4), 36-47.
- Akbar, H. (2003). Knowledge levels and their transformation: Towards the integration of knowledge creation and individual learning. *Journal of Management Studies*, 40(8), 1997-2021.
- Alavi, M. and Leidner, D.E. (2001). Review: Knowledge management and knowledge management systems: conceptual foundations and research issues, *MIS Quarterly*, 25(1), 107-36.
- Al-hawari, M. (2004). Knowledge management styles and performance: A knowledge space model from both theoretical and empirical perspectives. Unpublished doctoral dissertation, University of Wollongong, NSW, Australia.
- Ali, S.M., Qadus, A., Waseem, A., and Zaman, A., (2012). Linking knowledge management practices and the organizational performance of Pakistan's telecommunication, *Management Science Letters* 2(2012), 2929–2938.
- Argote, L. and Ingram, P. (2000). Knowledge transfer: A basis for competitive advantage in firms, *Organizational Behavior and Human Decision Processes*, 82(1), 150-169.

- Anandhi, B. (2000). A Resource-Based Perspective on Information Technology Capability and Firm Performance: An Empirical Investigation, *MIS Quarterly*, (24: 1).
- Anderson, J., Gerbing, W., (1988). Structural equation modelling in practice: A review and recommended two stage approach. *Psychological Bulletin*, 27(1), 5-24.
- Andriessen, J. (2006). Arguing to learn. In K. Sawyer. (Ed). The Cambridge handbook of the learning sciences. (pp. 443-459). Cambridge: Cambridge University Press
- Anthony, R.N. and Govindarajan, V. (1998). Management Control Systems, (9th ed.) Irwin/McGraw-Hill, New York, NY.
- Appleyard, M.M. (1996). How does knowledge flow? Interfirm patterns in the semiconductor industry, *Strategic Management Journal*, 17(S2), 137–154,
- Aramburu, N. and Saenz, J. (2011). Structural capital, innovation capability, and size effect: An empirical study. *Journal of Management & Organization*, 17(3), 307-325.
- Augier, M. and Teece, D.J. (2009). Dynamic Capabilities and the Role of Managers in Business Strategy and Economic Performance. *Organization Science*, 20(2), 410-421.
- Babbie, E. R. (1990). Survey research methods. Belmont, CA: Wadsworth
- Bacon, D.R., Sauer, P.L. & Young, M. (1995). Composite reliability in structural equations modeling, *Educational and Psychological Measurement*, 55(3), 394-406.
- Bagozzi, R.P. and Yi, Y. (1988). On the evaluation of structural equation models. *Journal of Academy of Marketing Science*, 16(1), 74-94.
- Barquin, R.C. (2001). What is knowledge management? Knowledge and Innovation.

Journal of The Kmci, 1(2), 127–143.

Barney, J.B. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), pp. 99-120.

Barney, J.B. and Hesterly, W.S. (2010), *Strategic Management and Competitive Advantage*, 3rd ed., Pearson/Prentice Hall, Upper Saddle River, NJ.

Baron, R.M. and 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(6), 1173-1182.

Beckman, T. (1997). A methodology for knowledge management, paper presented at *Artificial Intelligence and Software Computing Conference, Banff*.

Beijerese, R. P. (1999). Questions in knowledge management: defining and conceptualizing a phenomenon. *Journal of Knowledge Management*, 3(2), 94–110.

Berger, P.L. & Luckmann, T. (1967). *The Social Construction of Reality; a Treatise in the Sociology of Knowledge*. Penguin, Harmondsworth (Originality: Doubleday, Garden City, N.Y. 1966).

Benitez-Amado, J. and Walczuch, R. M. (2012). Information technology, the organizational capability of proactive corporate environmental strategy and firm performance: a resource-based analysis. *European Journal of Information Systems*, 21, 664–679.

Bentler, P.M. (1990). Comparative Fit Indexes in Structural Models," *Psychological Bulletin*, 107(2), 238-46.

Bratianu, C., & Orzea, I. (2013). The entropic intellectual capital model, *Knowledge management research and practice*, 11(2), 133-141.

Beveren, J.V. (2003). Does health care for knowledge management? *Journal of*

Knowledge Management, 7(1), 90–95.

Bhatt, G.D. (2001). Knowledge management in organizations: examining the interaction between technologies, techniques, and people. *Journal of Knowledge Management*, 5(1), 68-75.

Bharadwaj, A.S. (2000). A resource-based perspective on information technology capability and firm performance: an empirical investigation, *MIS Quarterly*, 24(1), 169-196.

Bierly P and Chakrabarti A (1996). Generic knowledge strategies in the U.S. pharmaceutical industry. *Strategic Management Journal* 17(Winter Special Issue), 123–135.

Binney, D. (2001). The knowledge management spectrum – understanding the KM landscape, *Journal of Knowledge Management*, 5(1), 33-42.

Black, D.H. and Synan C.D. (1997). The learning organization: The sixth discipline? *Management Accounting British*, 75 (10), 70–72.

Bloodgood, J. M. and Chilton, M. A. (2012). Performance implications of matching adaption and innovation cognitive style with explicit and tacit knowledge resources. *Knowledge Management Research & Practice*, 10(2), 106-117.

Boedker, C., Guthrie, J. & Cuganesan, S. (2005). The strategic significance of human capital information in annual reporting. *Journal of Human Resource Costing and Accounting*, 8(2), 722.

Bohn, R. (1994). Measuring and managing technological knowledge. *Sloan Management Review*, 34(1), 61-73.

Boisot, M. (1987). *Information and organizations: The manager as anthropologist*.

London, Fontana Collins.

- Boisot, M. H. (1998). *Knowledge assets*. Oxford: Oxford University Press.
- Bogner, W. C. and Bansal, P. (2007). Knowledge management as the basis of sustained high performance. *Journal of Management Studies*, 44(1), 165-188.
- Bontis, N. (1998). Intellectual capital: an exploratory study that develops measures and models. *Management Decision*, 36(2), 63-76.
- Bontis, N., Keow, W. C. C. and Richardson, S. (2000). Intellectual capital and business performance in Malaysian industries. *Journal of Intellectual Capital*, 1(1), 85-100.
- Bontis, N. Seleim, A. and Ashour, A. (2007). Human capital and organizational performance: a study of Egyptian software companies. *Management Decision*, 45(4), 789-801.
- Bowersox, D. J. Closs, D. J. Stank, T. P. and Keller, S. B. (2000). How supply chain competency leads to business success. *Supply Chain Management Review*, 4(4), 70-78.
- Bryman, A. (2004). *Social Research Methods (2nd edition)*. Oxford: Oxford University Press.
- Brown, T.A. (2006). *Confirmatory Factor Analysis for Applied Research*, The Guilford Press, New York, NY.
- Bresnen, M., Edelman, L., Newell, S., Scarbrough, H. & Swan, J. (2003). Social practices and the management of knowledge in project environments. *International Journal of Project Management*, 21(3), 157-166.
- Burgelman, R., Maidique, M.A. and Wheelwright, S.C. (2004). *Strategic Management of Technology and Innovation*. McGraw-Hill, New York: 8-12.
- Byrne, B. M. (1994). *Structural equation modeling with EQS and EQS/Windows*. Thousand Oaks, CA: Sage Publications.

- Byrne, B.M. (2001). Structural equation modeling with AMOS: Basic concepts, applications and programming. Lawrence Erlbaum Associates, Inc., 10 Industrial Avenue Mahwah, New Jersey U.S.A.
- Byrne, B.M. (2010). Structural equation modeling with AMOS: Basic concepts, application and programming 2nd Edition. Taylor & Francis Group 270 Madison Avenue New York, NY 10016.
- Cabello-Medina, C. Lopez-Cabrales, A. and Valle-Cabrera, R. (2011). Leveraging the innovative performance of human capital through HRM and social capital in Spanish firms. *International Journal of Human Resource Management*, 22(4), 807-828.
- Cacioppo, J. T., Semin, G. R., & Berntson, G. G. (2004). Realism, instrumentalism, and scientific symbiosis: Psychological theory as a search for truth and the discovery of solutions. *American Psychologist*, 59, 214–223
- Campbell, B. A. Coff, R. and Kruscynski, D. (2012). Rethinking Sustained Competitive Advantage from Human Capital. *The Academy of Management Review (AMR)*, 37(3), 376-395.
- Carr, A. S. and Kaynak, H. (2007). Communication methods, information sharing, supplier development and performance - An empirical study of their relationships. *International Journal of Operations & Production Management*, 27 (3-4), 346-370.
- Carmeli, A. and Azeroual, B. (2009). How relational capital and knowledge combination capability enhance the performance of work units in a high technology industry. *Strategic Entrepreneurship Journal*, 3(1), 85-103.
- Carrillo, P.M., Robinson, H.S., Anumba, C.J. and Al-Ghassani, A.M. (2003). IMPaKT: A Framework for Linking Knowledge Management to Business Performance. *Electronic Journal of Knowledge Management*, 1(1), 1-12
- Cavana, R. Y., Delahaye, B. L., Sekaran, U. (2000). *Applied Business Research:*

Qualitative and Quantitative Methods, John Wiley & Sons Australia Ltd., Australia.

Chauvel, D. and Dupres, C. (2002). A review of survey research in knowledge management: 1997-2001, *Journal of Knowledge Management*, 6(3), 207-23.

Chan, I., & Chau, P. Y. K. (2005). Getting knowledge management right: Lessons from failure. *The International Journal of Knowledge Management*, 1(3), 40-54.

Chen, C. J. Shih, H. A. and Yang, S. Y. (2009). The Role of Intellectual Capital in Knowledge Transfer. *Ieee Transactions on Engineering Management*, 56(3), 402-411.

Chen C.J. and Huang J.W. (2009). Strategic human resource practices and innovation performance-The mediating role of knowledge management capacity. *Journal of Business Research*, 62(1), 104-115.

Chao, C. Y. Hwu, S. L. and Chang, C. C. (2011). Supporting interaction among participants of online learning using the knowledge sharing concept. *Turkish Online Journal of Educational Technology*, 10(4), 311-319.

Chin, W.W., Marcolin, B.L. and Newstead, P.R. (2003). A partial least square latent variable modeling approach for measuring interaction effects: results from a Monte Carlo simulation study and an electronic-mail emotion/adoption study, *Information Systems Research*, 14(2), 189-217.

Choi, B. (2002). *Knowledge management enablers, process, and organizational performance: An integration and empirical examination*. Unpublished doctoral dissertation, Korea Advanced Institute of Science and Technology, Korea.

Choi, B., & Lee, H. (2002). Knowledge management strategy and its link to knowledge creation process. *Expert System with Applications*, 23(3), 173-187.

- Choi, B., & Lee, H. (2003). An empirical investigation of KM styles and their effect on corporate performance. *Information & Management*, 40(5), 403-417.
- Chong, S.C. & Lin, B. (2008). Exploring knowledge management (KM) issues and KM performance outcomes: empirical evidence from Malaysian multimedia super corridor companies. *International Journal of Technology Management*, 43(4), 285-303.
- Chou, C., & Bentler, P. M. (1995). *Estimates and tests in structural equation modeling*. In R. H. Hoyle (Ed.), *Structural equation modeling: Concepts, issues, and applications* (pp. 37-55). Thousand Oaks, CA: Sage.
- Clemons, E.K. and Row, M.C. (1991). Sustaining IT advantage: the role of structural differences. *MIS Quarterly*, 15(3), 275-92.
- Coakes, E. (2006). Storing and sharing knowledge: Supporting the management of knowledge made explicit in transnational organizations. *Learning Organization*, 13(6),579-593.
- Cohen, W.M. and Levinthal, D.A. (1990-March). Absorptive Capacity: A New Perspective on Learning and Innovation. *Administrative Science Quarterly*, 35(1), Special Issue: Technology, Organizations, and Innovation. (Mar., 1990), 128-152.
- Collins, J. D. and Hitt, M. A. (2006). Leveraging tacit knowledge in alliances: The importance of using relational capabilities to build and leverage relational capital. *Journal of Engineering and Technology Management*, 23(3), 147-167.
- Conner, K., & Prahalad, C. K. (1996). A resource based theory of the organization: Knowledge versus opportunism. *Organization Science*, 75: 477–501.
- Cousins, P. D., Handfield, R. B., Lawson, B. and Petersen, K. J. (2006). Creating supply chain relational capital: The impact of formal and informal socialization processes, *Journal of Operations Management*, 24(6), 851-863.

- Creswell, J.W. (1994). *Research Design: Qualitative and Quantitative approaches*. Thousand Oaks, CA: Sage.
- Creswell, J.W. (2003). *Research Design: Qualitative, Quantitative and mixed methods approaches*. (2nd edn). Thousand Oaks, CA: Sage.
- Creswell, J. W., & Clark, V. L. P. (2007). *Designing and conducting mixed methods research*. Thousand Oaks, CA: SAGE Publications. Goal
- Crotty, M. (1998). 'The Foundations of Social Research: Meaning and Perspective in the Research Process'. Thousand Oaks, CA: Sage.
- Cummings, J. (2003). Knowledge sharing: a literature review, The World Bank, Washington, D.C.
- Curado, C. and Bontis, N. (2007). Managing intellectual capital: the MIC matrix, *International Journal of Knowledge and Learning*, 3(2/3), 316-328.
- Dalkir, K. (2005). *Knowledge Management in Theory and Practice*, Elsevier Butterworth-Heinemann, Burlington, MA
- Davenport, T. H. (1997). *Information ecology: Mastering the information and knowledge environment*. New York, NY: Oxford University Press.
- Darroch, J. and Mcnaughton, R. (2002). Examining the link between knowledge management practices and types of innovation. *Journal of Intellectual Capital*, 3(3), 210-222.
- Davenport, T.H. and Prusak, L. (1998). *Working Knowledge: How Organizations Manage what They Know*. Harvard Business School Press, Boston, MA.
- Davenport, T.H. and DeLong, S.C. (2001). The rise of knowledge towards attention management. *Journal of Knowledge Management*, 5(3), 212-21.
- Denzin, N. K., & Lincoln, Y. S. (1998). *Collecting and interpreting qualitative*

material. Thousand Oaks, CA: Sage.

DeTienne, K. B., Dyer, G., Hoopes, C., & Harris, S. (2004). Toward a model of effective knowledge management and directions for future research: Culture, leadership, and CKOs. *Journal of Leadership & Organizational Studies*, 10(4), 26-43.

DeLong, D. (1997). *Building the knowledge-based organization: How culture drives knowledge behaviors*.

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

De Brentani, U. and Kleinschmidt, E. J. (2004). Corporate culture and commitment: impact on performance of international new product development programs. *Journal of Product Innovation Management*, 21(5), 309-333.

Decarolis, D.M. and Deeds, D.L. (1999). The impact of stocks and flows of organizational knowledge on firm performance: an empirical investigation of the biotechnology industry, *Strategic Management Journal*, 20(10), 953-68.

De Pablos, P. O. (2004). Measuring and reporting structural capital: Lessons from European learning firms. *Journal of Intellectual Capital*, 5(4), 629-647.

De Clercq, D. and Sapienza, H. J. (2006). Effects of relational capital and commitment on venture capitalists' perception of portfolio company performance. *Journal of Business Venturing*, 21(3), 326-347.

Dewhurst, F. W. and Navarro, J. G. C. (2004). External communities of practice and relational capital. *Learning Organization*, 11(4/5), 322-331.

Down, S. (2001). Knowledge sharing review-The use of history in business and management, and some implications for management learning. *Management Learning*, 32(3), 393-410.

- Drucker, P.F. (1993). *Post Capitalist Society*, HarperCollins, New York, NY.
- Drucker, P.F. (1999a). Knowledge-worker productivity: the biggest challenge. *California Management Review*, 41(2), 79-94.
- Drucker, P.F. (1999b). *Management Challenges for the 21st Century*, Elsevier Butterworth-Heinemann, Oxford.
- Droge, C., Calantone, R. and Harmancioglu, N. (2008). New product success: Is it really controllable by managers in highly turbulent environments? *Journal of Product Innovation Management*, 25, 272-286.
- Du Plessis, M. (2007). The role of knowledge management in innovation. *Journal of Knowledge Management*, 11(4), 20–29
<http://dx.doi.org/10.1108/13673270710762684>.
- Du, R. Ai, S. Z. and Ren, Y. Q. (2007). Relationship between knowledge sharing and performance: A survey in Xi'an, China. *Expert Systems with Applications*, 32(1), 38-46.
- Felin, T. and Hesterly, W. S. (2007). The knowledge-based view, nested heterogeneity, and new value creation: Philosophical considerations on the locus of knowledge. *Academy of Management Review*, 32(1), 195-218.
- Fraenkel, J.R. and Wallen, N.E. (2000). *How to Design and Evaluate Research in Education*, New York, NY: Mc Graw-hill companies etc.
- Fulmer, I. S. Gerhart, B. and Scott, K. S. (2006). Are the 100 best better? An empirical investigation of the relationship between being a “great place to work” and firm performance. *Personnel Psychology*, 56(4), 965-993.
- Edvinsson, L. and Malone, M. S. (1997). *Intellectual capital: Realizing your company's true value by finding its hidden brainpower*, HarperBusiness New York,
- Eren, E. (1982). *İşletmelerde Yenilik Politikası*, İstanbul Üniversitesi işletme

Fakiiltesi Yayinlan, Formul Matbaasi, Istanbul.

Ernest L, Heriyadi (2008). *Basic analysis: A guide for student and researchers*. Lee Miing Press Sdn Bhd, Kuching Srawak.

Etzioni, A. (1964). *Modern Organizations*, Englewood Cliffs, NJ: Prentice Hall.

Fleck, J. (1997). Contingent knowledge and technology development. *Technology Analysis & Strategic Management*, 9(4), 383-397.

Fahey, L., & Prusak, L. (1998). The eleven deadliest sins of knowledge management. *California Management Review*, 40(3), 265-276.

Fan, X., Thompson, B., and Wang, L. (1999). Effects of Sample Size, Estimation Methods, and Model Specification on Structural Equation Modeling Fit Indexes. *Structural Equation Modeling*, 6(1), 56-83.

Finn, O.B. and Torgeir, D. (2008). Knowledge management in software engineering: a systematic review of studied concepts, findings and research methods used. *Information and Software Technology*, 50(11), 1055–1068.

Foss, N.J. (1996). *Introduction: the emerging competence perspective*, in Foss, N.J. and Knudsen, C. (Eds), *Towards a Competence Theory of the Firm*, Routledge, London, pp. 1-12

Fornell, C. and Larcker, D. F. (1981), "Evaluating structural equation models with unobservable variables and measurement error", *Journal of marketing research*, Vol. 18 No. 1, pp. 39-50.

Forehand, G. A. and Von Gilmer, (1964). Environmental Variations in Studies of Organizational Behavior. *Psychological Bulletin*, 62, 361-382.

Gable, G. G. (1994). Integrating case study and survey research methods: an example in information systems. *European Journal of Information Systems*, 3(2), 112-126.

- Gao, W. He, X. and Wang, H. (2009). The Impact of Knowledge Integration on Firm Performance. *Journal of International Technology and Information Management*, 18(2), 239.
- Greiner, M.E., Böhmann, T and Krcmar, H. (2007). A strategy for knowledge management. *Journal of Knowledge Management*, 11(6) 3-15, doi: 10.1108/13673270710832127
- Germain, R. Davis-Sramek, B. Lonial, S. C. and Raju, P. (2011). The Impact of Relational Supplier Exchange on Financial Performance: A Study of the Hospital Sector. *Journal of Business Logistics*, 32(3), 240-253.
- Ghozali, I. (2008). Structural Equation Modeling: Metode Alternatif Dengan Partial Least Square (PLS), Badan Penerbit UNDIP, Semarang.
- Gilbert & Gordey-Hayes. (1996). Understand the process of knowledge transfer to achieve successful technological innovation. *Technovation*, 16(4), 301-302
- Gloet, M. and Terziovski, M. (2004). Exploring the relationship between knowledge management practices and innovation performance", *Journal of Manufacturing Technology Management*, 15(5), 402-409.
- Gold, A.H., Malhotra, A. and Segars, A.H. (2001). Knowledge management: an organizational capabilities perspective", *Journal of Management Information Systems*. 18(1), 185-214.
- Gourlay,S. (2002). Tacit Knowledge, Tacit Knowing or Behaving? 3rd European Organizational Knowledge, Learning, and Capabilities Conference, Athens, Greece, 5-6 April.
- Grant, R.M. (1996). Prospering in dynamically-competitive environments: organizational capacity as knowledge integration. *Organization Science*, 7, 375-87.
- Grant, R. M. (1996). Toward a knowledge-based theory of the firm. *Strategic*

Management Journal, 17, 109-122.

Grover, V., Davenport, T. (2001). General perspectives on knowledge management: fostering a research agenda. *Journal of Management Information Systems*, 18(1), 5-21.

Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 105-117). Thousand Oaks, CA: Sage.

Gupta, A.K. and Govindarajan, V. (2000). Knowledge flows within multinational corporations. *Strategic Management Journal*, 21(4), 473-96.

Haas, M. R. and Hansen, M. T. (2007). Different knowledge, different benefits: Toward a productivity perspective on knowledge sharing in organizations. *Strategic Management Journal*, 28(11), 1133-1153.

Hair, J. F., Jr., Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). *Multivariate data analysis*. Boston, MA: Person Education Inc.

Hair, J.F., Black, W.C., Babin, B.J., & Anderson, R.E. (2010). *Multivariate Data Analysis*. Seventh Edition. Prentice Hall, Upper Saddle River, New Jersey.

Hair J.F., William C.B., Barry J.B and Rolph E.A. (2006). *Assessing structural equation modeling model validity*.

Hair J.F., William C.B., Barry J.B, and Rolph E.A. (2010). *Multivariate data analysis* 7th edition.

Haggie, K., & Kingston, J. (2003). *Choosing your knowledge management strategy*.

Hansen, M.T. (1999). The search-transfer problem: the role of weak ties in sharing knowledge across organizational subunits. *Administrative Science Quarterly*, 44(1), 82-111.

Hansen, M.T., Nohria, N. and Tierney, T. (1999). *What's your strategy for managing*

knowledge? Harvard Business Review, March-April, pp. 106-16

- Haragadon, A., & Fanelli, A. (2002). Action and possibility: Reconciling dual perspectives of knowledge in organizations. *Organization Science*, 13(3), 290–302.
- Herath, S.K. (2007). A framework for management control research. *Journal of Management Development*, 26(9), 895-915.
- Herremans, I. M. Isaac, R. G. Kline, T. J. B. and Nazari, J. A. (2011). Intellectual Capital and Uncertainty of Knowledge: Control by Design of the Management System. *Journal of Business Ethics*, 98(4), 627-640.
- Hill, G.W.L. and Rothaermel, F.T. (2003). The performance of incumbent firms in the face of radical technological innovation. *Academy of Management Review*, 28, 257-274.
- Hoetker, G., & Agarwal, R. (2007). Death hurts, but it isn't fatal: The postexit diffusion of knowledge created by innovative companies. *Academy of Management Journal*, 50, 446-467.
- Harold, H. (2008). The effect of tacit knowledge on firm performance. *Journal of Knowledge Management*, 12(1), 148-163.
- Helfat, C.E. and Peteraf, M.A. (2003). The dynamic resource-based view: capability lifecycles. *Strategic Management Journal*, 24(10), 997-1010.
- Hsieh, M.-H. & Tsai, K.-H. (2007). Technological capability, social capital and the launch strategy for innovative products. *Industrial Marketing Management*, 36, 493-502
- Holste, J. S. and Fields, D. (2010). Trust and tacit knowledge sharing and use. *Journal of Knowledge Management*, 14(1), 128-140.
- Hsiu-Fen Lin, (2007). Knowledge sharing and firm innovation capability: an

empirical study. *International Journal of Manpower*, 28(3/4), 315–332

Hsu, I. C. (2008). Knowledge sharing practices as a facilitating factor for improving organizational

Hsu, I. C. and Sabherwal, R. (2012). Relationship between Intellectual Capital and Knowledge: An empirical investigation. *Decision Sciences*, 43(3), 489-524.

Hsu, Y. H. and Fang, W. C. (2009). Intellectual capital and new product development performance: The mediating role of organizational learning capability. *Technological Forecasting and Social Change*, 76(5), 664-677.

Hsu, I. C. and Sabherwal, R. (2011). From Intellectual Capital to Firm Performance: The Mediating Role of Knowledge Management Capabilities. *Transactions on Engineering Management*, 58(4), 626-642.

Hsu, I. C. and Sabherwal, R. (2012). Relationship between Intellectual Capital and Knowledge Management: An Empirical Investigation. *Decision Sciences*, 43(3), 489-524.

Hsu, L. C. and Wang, C. H. (2012). Clarifying the Effect of Intellectual Capital on Performance: The Mediating Role of Dynamic Capability. *British Journal of Management*, 23(2), 179-205.

Hubert, S. (1996). Tacit knowledge: The key to the strategic alignment of intellectual capital. *Strategy & Leadership*, 24(2), 10-13.

Hu, L. & Bentler, M.P. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural equation Modeling*, 6(1), 1-55.

Hu, M. L. M. (2009). Knowledge sharing and innovative service behavior relationship: guanxi as mediator. *Social Behavior and Personality*, 37(7), 977-992.

Hu, L.T. and Bentler, P.M. (1999). Cutoff Criteria for Fit Indexes in Covariance

Structure Analysis: Conventional Criteria versus New Alternatives. *Structural Equation Modeling*, 6(1), 1-55.

Hurley, A.E., Scandura, T.A., Schriesheim, C.A., Brannick, M.T., Seers, A., Vandenberg, R.J. and Williams, L.J. (1997). Exploratory and confirmatory factor analysis: guidelines, issues, and alternatives. *Journal of Organizational Behavior*, 18(6), 667-83.

Hurley, T. A., & Green, C. W. (2005). Creating a knowledge management culture: The role of task, structure, technology, and people in encouraging knowledge creation and transfer. *Proceedings of the 2005 Midwest Academy of Management Conference*.

Huang, Y. C. and Wu, Y. C. J. (2010). Intellectual capital and knowledge productivity: the Taiwan biotech industry. *Management Decision*, 48(4), 580-599. 10.1108/00251741011041364

Huysman, M. and de Wit, D. (2004). Practices of managing knowledge sharing: towards a second wave of knowledge management. *Knowledge and Process Management*, 11(2), 81-92.

Itami, H. (1987). *Mobilizing Invisible Assets*, Harvard University Press, London.

Inman, R. A. Sale, R. S. Green Jr, K. W. and Whitten, D. (2011). Agile manufacturing: Relation to JIT, operational performance and firm performance. *Journal of Operations Management*, Vol. 29, 343-355.

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

Ilan Oshri, I., van Fenema, P and Kotlarsky, J. (2008). Knowledge transfer in globally distributed teams: the role of transactive memory. *Information system journal*, 18, 593-616.

Jarvenpaa, S. L., & Staples, D. S. (2000). The use of collaborative electronic media

for information sharing: An exploratory study of determinants. *Strategic Information Systems*, 9(2-3), 129-154.

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.

Jennex, M.E. and Olfman, L. (2005). Assessing Knowledge Management Success, *International Journal of Knowledge Management*, 1(2), 33-49.

Joia, L. and Lemos, B. (2010). Relevant factors for tacit knowledge transfer within organizations *Journal of Knowledge Management*, 14(3), 410-427.

Johannessen, J. and Olsen, B. (2003). Knowledge management and sustainable competitive advantages: the impact of dynamic contextual training. *International Journal of Information Management*, 23(4), 277-89.

Johannessen, J. A. Olsen, B. and Olaisen, J. (2005). Intellectual capital as a holistic management philosophy: a theoretical perspective. *International Journal of Information Management*, 25(2), 151-171.

Jonsson, A. and Kalling, T. (2007). Challenges to knowledge sharing across national and intra-organizational boundaries. Case studies of IKEA and SCA. *Knowledge Management Research & Practice*, 5, 161-172. doi:10.1057/palgrave.kmrp.8500139.

Jo. R., Richard H., Peter L., Bella Y. L and Chi-Min W., (2008). Factors influencing organizational knowledge transfer: implication for corporate performance. *Journal of Knowledge Management*, 12(3), 84-100.

Jordan, J., & Jones, P. (1997). Assessing your company's knowledge management style. *Long Range Planning*, 30(3), 392-398.

Joshi, M., Cahill, D. and Sidhu, J. (2010). Intellectual capital performance in the banking sector: An assessment of Australian owned banks. *Journal of Human*

Resource Costing & Accounting, 14(2), 151-170.

Junnarkar, B. and Brown, C.V. (1997). Re-assessing the enabling role of information technology in KM. *Journal of Knowledge Management*, 1(2), 142-8.

Kaplan, R.S. and Norton, D.P. (2001a). Transforming the balanced scorecard from performance measurement to strategic management: part I. *Accounting Horizons*, 15(1), 87-104.

Karkoulian, S., Messarra, L. C., & McCarthy, R. (2013). The intriguing art of knowledge management and its relation to learning organizations. *Journal of Knowledge Management*, 17(4), 511-526.

Kalling, T. (2003). Knowledge management and the occasional links with performance. *Journal of Knowledge Management*, 7(3), 67-81.

Kale, P. Singh, H. and Perlmutter, H. (2000). Learning and protection of proprietary assets in strategic alliances: Building relational capital. *Strategic Management Journal*, 21,217-237.

Kang, M. and Kim. Y.G. (2010). A multilevel view on interpersonal knowledge transfer. *Journal of the American Society for Information Science and Technology*, 61(3), 483-494.

Karagiannis, D. Waldner, F. Stoeger, A. and Nemetz, M. (2008). A Knowledge Management Approach for Structural Capital. In Yamaguchi, *Practical Aspects of Knowledge Management, Proceedings*: 135-146.

Kelloway, E. K. (1998). *Using LISREL for structural equation modeling: A researcher's guide*. Thousand Oaks, CA: Sage Publications, Inc.

Kendall, K. E. (1997). The significance of information systems research on emerging technologies: Seven information technologies that promise to improve managerial effectiveness. *Decision Sciences*, 28(4), 775-792.

Keskin, H. (2005). The relationships between explicit and tacit oriented KM strategy

and firm performance. *Journal of American Academy of Business*, 7(1), 169-175.

Kiessling, T.S.K., Richey, G.R., Meng, J. and Dabic, M. (2009). Exploring knowledge management to organizational performance outcomes in a transitional economy. *Journal of World Business*, 44, 4321-433.

Kohli, A. K., & Jaworski, B. J. (1990). Market orientation: the construct, research propositions, and managerial implications. *Journal of Marketing*, 54(2). 1-18.

Kong, E. and Farrell, M. (2010). Knowledge and learning capabilities in non-profit organisations: a relational capital perspective, *The International Journal of Learning*, 17(3), 97-116.

Kong, E. and Farrell, M. (2010). Knowledge and learning capabilities in non-profit organizations: a relational capital perspective. *The International Journal of Learning*, 17(3), 97-116.

Kline, R. B. (1998). *Principles and practices of structural equation modeling*. New York: Guilford.

Kline, R. B. (2005). *Principles and practice of structural equation modeling (2nd ed.)*. New York: Guilford Press.

Kline, R. B. (2010), *Principles and practice of structural equation modeling*, The Guilford Press.

Kogut, B., & Zander, U. (1992). Knowledge of the firm, combinative capabilities, and the replication of technology. *Organization Science*, 3(3), 383–397.

Kotter, J.P. and Heskett, J.L. (1992). *Corporate Culture and Performance*, Macmillan, New York, NY.

Kogut, B., & Zander, U. (1992). Knowledge of the firm, combinative capabilities, and the replication of technology. *Organization Science*, 3(3), 383–397.

- Kulkarni, U.R., Ravindran, S., and Freeze, R. (2006). A knowledge management success model: Theoretical development and empirical validation. *Journal of Management Information Systems*, 23(3), 309–347.
- Kumar, J.A. and Ganesh, L.S. (2009). Research on knowledge transfer in organizations: a morphology. *Journal of Knowledge Management*, 13(4), 161-174
- Kraatz, M., & Moore, D. (2002). Executive Migration and Institutional Change. *Academy of Management Journal*, 45, 120–143
- Laframboise, K., Croteau, A., Beaudry, A. and Manovas, M. (2007). Interdepartmental knowledge transfer success during information technology projects, *International Journal of Knowledge Management*, 3(2), 47-67.
- Laupase, R. (2003). *The process of converting consultants' tacit knowledge to organizational explicit knowledge: Case studies in management consulting firms*. London, IRM Press.
- Law, C. C. H. and Ngai, E. W. T. (2008). An empirical study of the effects of knowledge sharing and learning behaviors on firm performance. *Expert Systems with Applications*, 34(4), 2342-2349.
- Law, K.S., Wong, C.S. and Mobley, W.H. (1998). Toward a taxonomy of multidimensional constructs. *Academy of Management Review*, 23(4), 741-755.
- Lawson, B. Petersen, K. J. Cousins, P. D. and Handfield, R. B. (2009). Knowledge Sharing in Inter organizational Product Development Teams: The Effect of Formal and Informal Socialization Mechanisms. *Journal of Product Innovation Management*, 26(2), 156-172.
- Liu, P.L., Chen, W.C. and Tsai, C.H. (2005). An empirical study on the correlation between the knowledge management method and new product development strategy on product performance in Taiwan's industries. *Technovation*, 25(7),

637-44.

Le Blanc, P. V. Gonzdlez, J. P. and Oxman, J. A. (1998). Case Study: Maximize your Compensation Rot Wnit High-Yield Investens in Human Capital. *Compensation & Benefits Review*, 30(2), 59-68.

Lee, C.C. and Yang, J. (2000). Knowledge value chain. *Journal of Management Development*, 19(9), 783–794. <http://dx.doi.org/10.1108/02621710010378228>

Lee, C.S. and Wong, K.Y. (2015). Development and validation of knowledge management performance measurement constructs for small and medium enterprises. *Journal of Knowledge Management*, 19(4), 711–734.

Lee, L.T. and Sukoco, B.M. (2007). The effects of entrepreneurial orientation and knowledge management capability on organizational effectiveness in Taiwan: the moderating role of social capital. *International Journal of Management*, 24(3), 549-73.

Lee, H. and 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, H. and Suh, Y. (2003). Knowledge conversion with information technology of Korean companies. *Business Process Management Journal*, 9(3), 317-36.

Lee, K.C., Lee, S., Kang, I.W. (2005). KMPI: Measuring Knowledge Management Performance, *Information and Management*, 42(3), 469-482.

Leonard, D., & Sensiper, S. (1998). *The role of tacit knowledge in group innovation. California Management Review*, 40(3), 112-132.

Lin, H. F. (2007b). Knowledge sharing and firm innovation capability: an empirical study”, *International Journal of Manpower*, 28(3-4), 315-332.

Liebeskind, J. P. (1996). Knowledge, strategy and the theory of the firm. *Strategic*

Management Journal, 17(Winter), 93-107.

Liebowitz, J. and Chen, Y. (2001). Developing Knowledge-Sharing Proficiencies. *Knowledge Management Review*, 3(6), 12-15.

Lincoln, Y.S. (1995a). The sixth moment: Emerging problems in qualitative research. *Studies in Symbolic Interaction, A Research Annual*, 19, 37-55.

Lincoln, Y. S. (1995b). Emerging criteria for quality in qualitative and interpretive research. *Qualitative Inquiry*, 1(3), 275-289.

Lincoln, Y.S. (2000). Varieties of validity: Quality in qualitative research. In J. S. Smart, (Ed.) *Higher education: Handbook of theory and research*, 16, (pp.25-72). New York: Agathon Press.

Ling, Y. H. and Jaw, B. S. (2006). The influence of international human capital on global initiatives and financial performance. *International Journal of Human Resource Management*, 17(3), 379-398.

Liao, S., Chang W., Hu D., Yueh Y. (2011). Relationship among organizational culture, knowledge acquisition, organizational learning, and organizational innovation in Taiwan's banking and insurance industries. *The International Journal of Human Resource Management*, 23(1), 52-70.

Liu, P. L., Chen, W. C. and Tsai, C. H. (2005). An empirical study on the correlation between the knowledge management method and new product development strategy on product performance in Taiwan industries. *Technovation*, 25, 637-644.

Lopez, V.W.B and Esteves, J. (2013). Acquiring external knowledge to avoid wheel re-invention. *Journal of Knowledge Management*, 17(1), 87-105.

Longo M, Mariani M, Mura M (2009). The effect of intellectual capital attributes on organizational performance. The case of the Bologna Opera House. *Knowledge Management Research and Practice*, 7(4), 365-376.

- Loehlin, J.C. (2004). *Latent Variable Models: An Introduction to Factor, Path and Structural Equation Analysis*. Lawrence Erlbaum Assoc. Inc.
- Lonnqvist, A. (2004), "Measurement of intangible success factors: case studies on the design, implementation and use of measures", Publication 475, doctoral dissertation, Tampere University of Technology, Tampere.
- Lundvall, B.A. and Nielsen, P. (2007). Knowledge management and innovation performance. *International Journal of Manpower*, 28(3-4), 207-23.
- Lyles, M.A. and Salk, J.E. (1996). Knowledge acquisition from foreign parents in international joint ventures: an empirical examination in the Hungarian context. *Journal of International Business Studies*, 27(5), 877-903.
- MacCallum, R.C., Browne, M.W., and Sugawara, H., M. (1996). Power Analysis and Determination of Sample Size for Covariance Structure Modeling. *Psychological Methods*, 1(2), 130-49.
- Machlup, F. (1972). *The Production and Distribution of Knowledge in the United States*, Princeton, NJ: Princeton University Press.
- Madsen, H., Neergaard, H., & Ulhøi, J. P. (2003). Knowledge-intensive entrepreneurship and human capital. *Journal of Small Business and Enterprise Development*, 10(4).426-434
- Malhotra, N. K. (1999). *Marketing Research, an Applied Orientation*, (3rd ed.) Englewood Cliffs, NJ: Prentice-Hall.
- Maier, R. and Remus, U. (2002). Defining process-oriented knowledge management strategies, *Knowledge and Process Management*, 9(2), 103-118.
- Marwick, A. D. (2001). Knowledge management technology. *IBM Systems Journal*, 40(4), 814-830.
- Marsh, H.W. & Hocevar, D. (1985). Application of confirmatory factor analysis to the study of self-concept: First-and higher order factor models and their invariance

across groups. *Psychological Bulletin*, 97, 362-582.

Marshall, L. (1997). Facilitating knowledge management and knowledge sharing: New opportunities for information professionals. *Online*, 21(5), 92-98.

Martinez-Torres, M. R. (2006). A procedure to design a structural and measurement model of Intellectual Capital: An exploratory study. *Information & Management*, 43(5), 617-626.

Marr, B., Neely, A., Franco, M., Wilcox, M., Adams, Ch. and Manson, S. (2004). Business Performance Measurements - What is the state of the art? *Conference proceedings from Performance Measurement Association, Edinburgh, UK.*

Marques, D.P. and Simon, F.J.G. (2006). The effect of knowledge management practices on firm performance. *Journal of Knowledge Management*, 10(3), 1367-3270.

Martens, M. P. (2005). The use of structural equation modeling in counseling psychology research. *The Counseling Psychologist*, 33, 269-298.

Massey, A., Montoya-Weiss, M. and O's Driscoll, T. (2002). Knowledge management in pursuit of performance: Insights from Nortel networks. *MIS quarterly*, 26(3), 269-289.

Matthew, C. T. and Sternberg, R. J. (2009). Developing experience-based (tacit) knowledge through reflection. *Learning and Individual Differences*, 19(4), 530-540.

Mavondo F. & Farell M. (2003). Cultural orientation: Its relationship with market orientation, innovation and organizational performance. *Management Decision*, 41(3), 241-249.

Mehralian, G., Rajabzadeh, A., Sadeh, M.R., & Rasekh, H.R. (2012). Intellectual capital and corporate performance in Iranian pharmaceutical industry. *Journal*

of Intellectual Capital, 13(1), 138-158.

Mavridis, D.G. (2004). The intellectual capital performance of the Japanese banking sector. *Journal of Intellectual Capital*, 5(1), 92-115.

McAdam, R. Moffett, S. and Peng, J. (2012). Knowledge sharing in Chinese service organizations: a multi case cultural perspective. *Journal of Knowledge Management*, 16(1), 129-147.

McDermott, R. and O'Dell.C. (2001). Overcoming cultural barriers to sharing knowledge. *Journal of Knowledge Management*, 5(1), 76 - 85

McDonald, R.P. and Ho, M.-H.R. (2002). Principles and Practice in Reporting Statistical Equation Analyses. *Psychological Methods*, 7(1), 64-82.

McEvily, S. K.Das, S.andMcCabe, K. (2000). Avoiding competence substitution through knowledge sharing. *Academy of Management Review*, 25(2), 294-311.

McKenna, R. (1999). *New management*. Sydney, McGraw-Hill.f

Melville, N., Kraemer, K., & Gurbaxani, V. (2004). Review: information technology and organizational performance: an integrative model of IT business value. *MIS Quarterly*, 28(2), 283-322.

Mengistae, T. (2006). Competition and entrepreneurs' human capital in small business longevity and growth. *Journal of Development Studies*, 42(5), 812-836.

Mesmer-Magnus, J. R. and DeChurch, L. A. (2009). Information sharing and team performance: A meta-analysis. *Journal of Applied Psychology*, 94(2), 535-546

Miles, J. and Shevlin, M. (2007). A time and a place for incremental fit indices. *Personality and Individual Differences*, 42(5), 869-74.

Mills, A. M. and Smith, T.A. (2011). Knowledge management and organizational

performance: a decomposed view. *Journal of Knowledge Management*, 15(1),156-171.

Miller, J., Dermaid, A., & Quintas, P. (1997). Trans-organisational innovation: A framework for research. *Technology Analysis and Strategic Management*, 9(4), 399-418.

Mohiuddin, M.,Najibullah, S. & Shahid, A.I.(2006). An Exploratory Study on Intellectual Capital Performance of the Commercial Banks in Bangladesh. *The Cost and Management*, 34(6), 40-54.

Moffett, S., McAdam, R. and Parkinson, S. (2003). An empirical analysis of knowledge management applications. *Journal of Knowledge Management*, 7(3), 6-26.

Mouritsen, J., & Larsen, H. T. (2005). The 2nd wave of knowledge management: The management control of knowledge resources through intellectual capital information. *Management Accounting Research*, 16(3), 371–394.

Mueller, R. O., & Hancock, G. R. (2004). Evaluating structural equation modeling studies: Some practical suggestions to manuscript reviewers. *Paper presented at the meeting of the American Educational Research Association*, San Diego, CA.

Murphy, J. P. (1990). *Pragmatism: From Peirce to Davidson*. Boulder, CO: Westview.

Mulaik, S.A., James, L.R., Van Alstine, J., Bennet, N., Lind, S., and Stilwell, C.D. (1989). "Evaluation of Goodness-of-Fit Indices for Structural Equation Models. *Psychological Bulletin*, 105(3), 430-450.

Namasivayam, K. and Denizci, B. (2006). Human capital in service organizations: identifying value drivers. *Journal of Intellectual Capital*, 7(3), 381 – 393.

Namvar, M. Fathian, M. Akhavan, P. and Gholamian, M. R. (2010). Exploring the

impacts of intellectual property on intellectual capital and company performance. The case of Iranian computer and electronic organizations. *Management Decision*, 48(5-6), 676-697.

Nahapiet, J. and Ghoshal, S. (1998). Social capital, intellectual capital, and the organizational advantage. *Academy of Management Review*, 23(2), 242-266.

Nelson, K. and Coopridge, J. (1996). The Contribution of Shared Knowledge to IS Group Performance. *MIS Quarterly*, 20(4), 409-429

Neuman, W. L. (2000). *Social research methods: Qualitative and quantitative approaches*. Boston: Allyn & Bacon.

Neuman, W., and Kreuger, L. (2003). *Social work research methods: Qualitative and quantitative approaches*. Boston: Allyn and Bacon.

Nonaka, I. (1994). A dynamic theory of organizational knowledge creation. *Organization Science*, 5(1) 14-37.

Ngoc, P. T. B. (2005). An Empirical Study of Knowledge Transfer within Vietnam's IT Companies, *Working paper*: Hanoi, Switzerland.

Nonaka, I. and Takeuchi, H. (1995). *The knowledge-creating company: How Japanese companies create the dynamics of innovation*, Oxford University Press, USA,

Nunnally, J., & Bernstein, I. (1994). *Psychometric theory (3rd ed.)*. New York: McGraw-Hill.

Oluikpe, P. (2012). Developing a corporate knowledge management strategy. *Journal of Knowledge Management*, 6(6), 862-878. DOI 10.1108/13673271211276164.

Paisittanand, A., Digman, L.A. and Lee, S.M. (2007). Managing knowledge capabilities for strategy implementation effectiveness. *International Journal of*

Knowledge Management, 3(4), 84-110.

Pandey, S.C. and Dutta, A. (2013). Role of knowledge infrastructure capabilities in knowledge management, *Journal of knowledge management* 17 (3), 435-453

Parlby, D. and Taylor, R. (2000). 'The power of knowledge: a business guide to knowledge management, available at: www.kpmgconsulting.com/index.html (accessed 21 January 2006)

Park, K. (2006). *A review of the knowledge management model based on an empirical survey of Korean experts*. Unpublished doctoral dissertation, University of Kyushu, Korea.

Patton, M. Q. (1990). *Qualitative evaluation and research methods* (2nd ed.). Newbury Park, CA: Sage.

Prahalad, C. K. and Ramaswamy, V.(2000). Co-opting Customer Competence. *Harvard Business Review*, 78(1), 79-87.

Peteraf, M. A. (1993). The cornerstones of competitive advantage: A resource based views. *Strategic Management Journal*, 14, 179–191.

Perez, J. R., & Pablos, P. O. (2003). Knowledge management and organizational competitiveness: A framework for human capital analysis. *Journal of Knowledge Management*, 7(3), 82-91.

Phusavat, K. Comepa, N. Sitko-Lutek, A. and Ooi, K. B. (2011). Interrelationships between intellectual capital and performance Empirical examination. *Industrial Management & Data Systems*, 111(5-6), 810-829.

Peet, M. (2012). Leadership transitions, tacit knowledge sharing and organizational generativity. *Journal of Knowledge Management*, 16(1), 45-60.

Powell, T. (2001). Competitive Advantage: Logical and Philosophical Considerations. *Strategic Management Journal*, 22, 875-888.

- Powell, W.W. and Snellman, K. (2004). The Knowledge Economy, *Annual Review of Sociology*, August, 30, 199-220.
- Pentland, B. T. (1995). Information systems and organizational learning: The social epistemology of organizational knowledge systems. *Accounting, Management and Information Technologies*, 5(1), 1-21.
- Powell, T.C. and Dent-Micallef, A. (1997). Information technology as competitive advantage: the role of human, business, and technology resources. *Strategic Management Journal*, 18(5), 853-877.
- Polanyi, M. (1958). *Personal Knowledge: Towards a Post-Critical Philosophy*. University of Chicago Press, Chicago.
- Polanyi, M. (1966). *Human Knowledge*. Chicago: The University of Chicago Press.
- Polanyi, M. (1997). "Tacit Knowledge," Chapter 7 in *Knowledge in Organizations*, Laurence Prusak, Editor. Butterworth-Heinemann: Boston.
- Prieto, I.M. and Revilla, E. (2004). An Empirical Investigation of Knowledge Management Styles and Their Effects on Learning Capacity. *Management Research. Journal of the Iberoamerican Academy of Management*, 2(2),133–146
- Probst, G. J. B. (1998). *Practical knowledge management: A model that works*. Prism, Second Quarter, 17-29.
- Quigley, N. R. Tesluk, P. E. Locke, E. A. and Bartol, K. M. (2007). A multilevel investigation of the motivational mechanisms underlying knowledge sharing and performance. *Organization Science*, 18(1), 71-88.
- Quinn, J.B. (1992). *Intelligent Enterprise: A Knowledge and Service-based Paradigm*

for Industry, New York: Free Press.

Quinn, J. B., Anderson, P., & Finkelstein, S. (1996). Managing professional intellect: Making the most of the best. *Harvard Business Review*, 74(2), 71-80.

Rai, A., Patnayakuni, R. and Seth, N. (2006). Firm performance impacts of digitally-enabled supply chain integration capabilities. *MIS Quarterly*, 30(2), 225-246.

Rehman W., Rehman C., Rehman H. and Zahid A. (2011). Intellectual Capital Performance and Its Impact on Corporate Performance: An Empirical Evidence from Modaraba Sector of Pakistan. *Australian Journal of Business and Management Research*, 1(5), 8-16.

Remenyi, D., Williams, B., Money, A. and Swartz, E. (1998). *Doing Research in Business and Management: An introduction to process and method*. Sage, London

Reus, T. H. Ranft, A. L. Lamont, B. T. and Adams, G. L. (2009). An interpretive systems view of knowledge investments. *Academy of Management Review*, 34(3), 382-400.

Richert, A. (1999). Lessons from a major cultural change workshop programme. *Industrial and Commercial Training*, 31(7), 267-71.

Rivard, S., Raymond, L. and Verreault, D. (2006). Resource-based view and competitive strategy: an integrated model of the contribution of information technology to firm performance, *Journal of Strategic Information Systems*, 15(1), 29-50

Roos, G. and Roos, J. (1997). Measuring your company's intellectual performance. *Long Range Planning*, 30(3), 413-26.

Robbin, S. P. (2004). *Organizational behavior (11th ed.)*. Upper Saddle River, NJ: Prentice-Hall.

Roth J. (2003). Enabling knowledge creation: Learning from an R&D organization.

Journal of Knowledge Management, 7(1), 32-48.

Saenz, J., Aramburu, N. and Blanco, C.E. (2012). Knowledge sharing and innovation in Spanish and Colombian high-tech firms. *Journal of Knowledge Management*, 16(6), 919-933. DOI 10.1108/13673271211276191.

Sanchez, B.N., Budtz-Jorgensen, E., Ryan, L.M. and Hu, H. (2005). Structural equation models: a review with applications to environmental epidemiology. *Journal of American Statistical Association*, 100(472), 1443-55.

Salaman, G. and Storey, J. (2002). Managers' Theories about the Process of Innovation. *Journal of Management Studies*, 39, 147-165.

Salazar, A., Hackney, R. and Howells, J. (2003). The strategic impact of internet technology in biotechnology and pharmaceutical firms: insights from a knowledge management perspective. *Information Technology and Management*, 4(2/3), 289-301.

Segars, A. H., Grover, V., & Teng, J. T. C. (1998). Strategic information systems planning: Planning system dimensions, internal coalignment, and implications for planning effectiveness. *Decision Sciences*, 29(2), 303-345.

Sanchez, R., Heene, A. and Thomas, H. (1996). *Introduction: Towards the Theory and Practice of Competence-based Competition*, Pergamon Press, Oxford.

Scarborough, H. and Swan, J. (2002). Explaining the Diffusion of Knowledge Management: The Role of Fashion. *British Journal of Management*, 12(1), 3-12.

Schein, E. (1990). *Organizational culture*, *American Psychologist*, 45(2), 109-119.

Schulz, M. and Jobe, L.A. (2001). Codification and tacitness as knowledge management strategies: an empirical exploration. *Journal of High Technology Management Research*, 12(1), 139-65.

Schumacker, R. E., & Lomax, R. G. (2010). *A beginner's guide to structural equation*

modeling (3rd ed.). New York: Routledge.

Schminke, M., Ambrose, M. L., & Cropanzano, R. S. (2000). The effect of organizational structure on perception of fairness. *Journal of Applied Psychology*, 85(2), 294-304.

Seetharaman, A., Lock, T., Low, K. and Saravanan, A. S. (2004). Comparative justification on intellectual capital. *Journal of Intellectual Capital*, 5(4), 522-539.

Seleim, A. Ashour, A. and Bontis, N. (2007). Human capital and organizational performance: a study of Egyptian software companies. *Management Decision*, 45(4), 789-801.

Seleim, A. and Khalil, O. (2007). Knowledge management and organizational performance in the Egyptian software firms. *International Journal of Knowledge Management*, 3(4), 37-66.

Sharabati, A. A. A. Jawad, S. N. and Bontis, N. (2010). Intellectual capital and business performance in the pharmaceutical sector of Jordan. *Management Decision*, Vol. 48 No. 1-2, pp. 105-131.

Shih, C. P. Chen, W. C. and Morrison, M. (2010). The Impact of Intellectual Capital on Business Performance in Taiwanese Design Industry. *Journal of Knowledge Management Practice*, 11(1), 1-16.

Shin, M., Holden, T. & Schmidt, R. A. (2001). From knowledge theory to management practice: Towards an integrated approach. *Information Processing and Management*, 37(2), 335-355.

Shin, M. (2004). A framework for evaluating economics of knowledge management systems, *Information and Management*, 42, 179–196.

Sharp, P. (2006). MaKE: a knowledge management method", *Journal of Knowledge Management*, 10(6), 100-109. <http://dx.doi.org/10.1108/13673270610709242>

- Sher, P. J. and Lee, V. C. (2004). Information technology as a facilitator for enhancing dynamic capabilities through knowledge management. *Information & Management*, 41(8), 933-945.
- Simonin, B.L. (1997). The importance of collaborative know-how: an empirical test of the learning organization. *Academy of Management Journal*, 40(5), 1150-1174.
- Sin, L.Y.M. and Tse, A.C.B. (2000). How does marketing effectiveness mediate the effect of organizational culture on business performance? The case of service firms. *Journal of Services Marketing*, 14(4), 295-309.
- Singh.H. and Zollo, M. (1998). The impact of knowledge codification, experience trajectories and integration strategies on the performance of corporate acquisitions, *Academy of Management Best Paper Proceedings*, San Diego, CA.
- Skaggs, B. C. and Youndt, M. (2004). Strategic positioning, human capital, and performance in service organizations: A customer interaction approach. *Strategic Management Journal*, 25(1), 85-99.
- Skyrme, D. and Amidon, D. (1998). The knowledge agenda, in Cortaba, J.W. and Woods, J.A (Eds), *The Knowledge Management yearbook 1999-2000*, Butterworth-Heinemann, Wobum, MA.108-25.
- Small, C. T. (2006). Knowledge management and knowledge sharing: A review. *Information Knowledge Systems Management*, 5, 153-169.
- Smith, K., Collins, C., & Clark, K. (2005). *Existing knowledge, knowledge creation capability, and the rate of new product introduction in high-technology firms. Academy of Management Journal*, 48(2), 346–357.
- Snell, S.A. and Dean, J.W. (1992). Integrated manufacturing and human resources management: a human capital perspective. *Academy of Management Journal*,

35, 467-504.

Snell, S.A. and Dean, J.W. (1992). Integrated manufacturing and human resources management: a human capital perspective. *Academy of Management Journal*, 35, 467-504.

Soliman, F. Spooner, K. (2000). Strategies for implementing knowledge management: role of human resources management. *Journal of Knowledge Management*, 4(4), 337 – 345. <http://dx.doi.org/10.1108/13673270010379894>

Song, M., Zhang, F., Bij, H. V. D., & Weggeman, M. (2001). *Information technology, knowledge processes and innovation success*. Retrieved July 26, 2005, <http://ideas.repec.org/p/dgr/tuecis/0107.html>

Spender, J. C. and Marr, B. (2006). How a knowledge-based approach might illuminate the notion of human capital and its measurement. *Expert Systems with Applications*, 30(2), 265-271.

Spender, J.C. (1996). “Making knowledge the basis of a dynamic theory of the firm”, *Strategic Management Journal*, Vol. 17, pp. 45-62.

Stam, C.D. (2007). Making sense of knowledge productivity: beta testing the KP-enhancer. *Journal of intellectual capital*, 8(4), 628-640.

Stewart, T. A. (1994). Your company’s most valuable asset: intellectual capital. *Fortune*, 130(7), 68-74.

Stewart, T. (1997). *The New Wealth of Organizations*. Doubleday, New York, NY

Stewart, T. and Ruckdeschel, C. (1998). Intellectual capital: The new wealth of organizations. *Performance Improvement*, 37(7), 56-59.

Stewart, T.A. (2001), *The Wealth of Knowledge: Intellectual Capital and the Twenty-first Century Organization*, Doubleday, New York, NY.

Subramaniam, M. and Youndt, M. (2005a). *The Innovation of Intellectual Capital on*

the Types of Innovative Capabilities”, *Academy of Management Review*, 48(3), 450–463.

Subramaniam, M. and Youndt, M. A. (2005b). The influence of intellectual capital on the types of innovative capabilities. *Academy of Management Journal*, 48(3), 450-463.

Sullivan, P. H. (1999). Profitability for intellectual capital. *Journal of Knowledge Management*, 3(2), 132-143.

Sveiby, K.E. (1997). *The New Organizational Wealth: Managing and Measuring Knowledge-based Assets*, Berrett-Koehler, San Francisco, CA.

Swan, J., Newell, S., & Robertson, M. (2000). Limits of IT-driven knowledge management for interactive innovation processes: Toward a community-based approach. *Proceedings of the 33rd Hawaii International Conference on System Sciences*.

Syed-Ikhsan, S.O.S.B. and Rowland, F. (2004). Benchmarking knowledge management in a public organization in Malaysia, *Benchmarking: An International Journal*, 11(3), 238 – 266
<http://dx.doi.org/10.1108/14635770410538745>.

Huseman, R., & Goodman, J. (1999). *Leading With Knowledge: The Nature of Competition in the 21st Century*. Sage Publications.

Hutzschenreuter, T. and Horstkotte, J. (2010). Knowledge transfer to partners: a firm level perspective. *Journal of Knowledge Management*, 14(3), 428 - 448

Sveiby, K. E. (1998). Knowledge works: Managing intellectual capital at Toshiba, *Administrative Science Quarterly*, 43(4), 936-938.

Szulanski, G. (2000). The process of knowledge transfer: A diachronic analysis of stickiness, *Organizational Behavior and Human Decision Processed*, 82(1), 9-27.

- Tabachnick, B.G. and Fidell, L.S. (2007). *Using Multivariate Statistics (5th ed.)*. New York: Allyn and Bacon.
- Tan, S.S., Teo, H.H., Tan, B.C. and Wei, K.K. (1998) 'Developing a preliminary framework for knowledge management in organizations', in E. Hoadley and I. Benbasat (Eds.) Proceedings of the Fourth Americas Conference on Information Systems, Baltimore, MD, August, pp.629–631.
- Taminiau, Y. Smit, W. and de Lange, A. (2009). Innovation in management consulting firms through informal knowledge sharing. *Journal of Knowledge Management*, 13(1), 42-55.
- Tanriverdi, H. (2005). Information technology relatedness, knowledge management capability, and performance of multi-business firms, *MIS Quarterly*, 29(2), 311-34.
- Tan, S.S.L., Teo, H.H., Tan, B.C.Y. and Wei, K.K. "Developing a Preliminary Framework for Knowledge Management in Organizations," Proceedings of the Fourth Annual Americas Conference on Information Systems, Baltimore (Maryland), United States, 14 to 16 August 1998, pp. 629-631
- Tata, J. & Prasad, S. (2004). Team self-management, organizational structure, and judgments of team effectiveness. *Journal of Managerial Issues*, 16(2), 248-265.
- Teece, D.J. (2007). Explicating dynamic capabilities: The nature and micro foundations of sustainable enterprise performance. *Strategic Management Journal*, 28(13), 1319-1350.
- Teng, J. T. C. and Song, S. (2011). An exploratory examination of knowledge-sharing behaviors: solicited and voluntary. *Journal of Knowledge Management*, 15(1), 104-117.
- Teece, D. J. Pisano, G. and Shuen, A. (1997). Dynamic capabilities and strategic

management. *Strategic Management Journal*, 18(7), 509-533.

Teece, D. J. and Teece. (2000). *Managing intellectual capital: Organizational, strategic, and policy dimensions*, Taylor & Francis, Vaccaro, A. Parente, R. and Veloso, F. M. (2010), *Knowledge Management Tools*.

Tiwana, A. (2001). The Essential Guide to knowledge Management e-business and CRM Application. Prentice Hall, NY. Inter-Organizational Relationships, Innovation and Firm Performance. *Technological Forecasting and Social Change*, 77(7), 1076-1089.

Titiev, M. (1959). *Introduction to Cultural Anthropology*. New York: Henry Holt & Company.

Tsai, W. and Ghoshal, S. (1998). Social capital and value creation: The role of intrafirm networks. *Academy of Management Journal*, 41, 464-478.

Tseng, C. Y. and Goo, Y. J. J. (2005). Intellectual capital and corporate value in an emerging economy: Empirical study of Taiwanese manufacturers. *R&D Management*, 35(2), 187-201.

Treacy, M. and Wiersema, F. (1995). *The Discipline of Market Leaders: Choose Your Customers, Narrow Your Focus, Dominate Your Market*, Addison-Wesley, Reading, MA.

Turner K.L. and Makhija M.V. (2006). The role of organizational controls in managing knowledge. *Academy of Management Review* 31(1), 197–217.

Tuomi, I. (1999). Data is more than knowledge: Implications of the reversed knowledge hierarchy for knowledge management and organization memory. *Journal of Management Information Systems*, 16(3), 103-117.

Ullman, J. B. (2006). Structural equation modeling. In B. G. Tabachnick & L. S. Fidell (Eds.), *Using multivariate statistics*, (5th ed.; pp. 653–771). Boston: Allyn & Bacon.

- Van Buren, M. E. (1999). A yardstick for knowledge management. *Training & Development*, 53(5), 71-78.
- Vaccaro, A. Parente, R. and Veloso, F. M. (2010). Knowledge Management Tools, Inter-Organizational Relationships, Innovation and Firm Performance. *Technological Forecasting and Social Change*, 77(7), 1076-1089.
- Van den Hooff, B. and de Ridder, J.A. (2004). Knowledge sharing in context: the influence of organizational commitment, communication climate and CMC use on knowledge sharing”, *Journal of Knowledge Management*, 8(6), 117-130.
- Von Hippel, E. (1994). "Sticky Information" and the Locus of Problem Solving: Implications for Innovation. *Management Science*, 40(4), 429-439.
- Von Krogh, G. (1998). Care in knowledge creation. *California Management Review*, 40(3), 133–153.
- Wang, J., Peters, H.P. and Guan, J. (2006). Factors influencing knowledge productivity in German research groups: lessons for developing countries. *Journal of Knowledge Management*, 10(4), 113-126.
- Walsh, J. P., & Ungson, G. R. (1991). Organizational memory. *Academy of Management Review*, 16(1), 57-91
- Wade, M. and Hulland, J. (2004-March). The resource-based view and information systems research: review, extension, and suggestions for future research. *MIS quarterly*, 28(1), 107-142.
- Wang, C., Fergusson, C., Pretty, D. and Antomy, J. (2008). A conceptual case based model for knowledge sharing among supply chain members. *Business process management journal*, 14(2), 147-165.
- Wang, C. N. Chang, Y. L. Huang, Q. H. and Wang, C. H. (2011). Assessment on intellectual capital management for Taiwanese pharmaceutical industry: Using

- GRA and MPI. *African Journal of Business Management*, 5(7), 2950-2958.
- Wang, S. and Noe, R. A. (2010). Knowledge sharing: A review and directions for future research. *Human Resource Management Review*, 20(2), 115-131.
- Wang, N. Liang, H. Zhong, W. Xue, Y. and Xiao, J. (2012). Resource structuring or capability building? An empirical study of strategic value of information technology. *Journal of Management Information Systems*, 29(2), 325-367.
- Wang, Z. N. and Wang, N. X. (2012). Knowledge sharing, innovation and firm performance”, *Expert Systems with Applications*, 39(10), 8899-8908.
- Wang, Z., Wang, N. and Liang, H. (2014). Knowledge sharing, intellectual capital and firm performance. *Management Decision*, 52(2), 230-258.
- Webb, B.R. and Schlemmer, F. (2006). The impact of strategic assets on financial performance and on internet performance. *Electronic Markets*, 16(4), 371-385.
- Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, 5(2), 171-80.
- Wiig, K. (1996). Integrating intellectual capital and knowledge management. *Long Range Planning*, 30(3), 323–324.
- Wiig, K. M., de Hodg, R., & van der Spek, R. (1997). Support knowledge management: A selection of methods and techniques. *Expert Systems with Applications*, 13(1), 15-27.
- Wijnhoven, F. (1998). Designing organizational memories: Concept and method. *Journal of Organizational Computing and Electronic Commerce*, 18(1), 29-55.
- Woodman, R.W., Sawyer, J. E., & Griffin, R.W. (1993). Toward a theory of organizational creativity. *Academy of Management Review*, 18(2), 293-321.
- Wood, J. (2003). Australia: an underperforming knowledge nation? *Journal of*

Intellectual Capital, 4(2), 144-64.

Wu, W. Y. Chang, M. L. and Chen, C. W. (2008). Promoting innovation through the accumulation of intellectual capital, social capital, and entrepreneurial orientation. *R & D Management*, 38(3), 265-277.

Ying-Long Wu, Jian-Liang Chen, (2014). Knowledge management driven firm performance: the roles of business process capabilities and organizational learning. *Journal of Knowledge Management*, 18(6), 1141-1164

Yang, J. T. (2008). Individual attitudes and organizational knowledge sharing. *Tourism Management*, 29(2), 345-353.

Yang, C. F. and Lai, C. S. (2012). Relationship learning from organizational knowledge stores”, *Journal of Business Research*, 65(3), 421-428.

Yi, J. (2009). A measure of knowledge sharing behavior: Scale development and validation. *Knowledge Management Research and Practice*, 7, 65-81.

Yin, R.K. (1994). *Case Study Research Design and Methods*, (2nd edition), Sage Publications, London.

Yli-Renko, H., Autio, E. and Sapienza, H.J. (2001). Social capital, knowledge acquisition and knowledge exploitation in young technology-based firms. *Strategic Management Journal*, 22, 587-613.

Yoon, S. W. Matsui, M. Yamada, T. and Nof, S. Y. (2011). Analysis of effectiveness and benefits of collaboration modes with information- and knowledge-sharing. *Journal of Intelligent Manufacturing*, 22(1), 101-112.

Youndt, M. A. Subramaniam, M. and Snell, S. A. (2004). Intellectual capital profiles: An examination of investments and returns. *Journal of Management Studies*, 41(2), 335-361.

Xue, Y. Bradley, J. and Liang, H. (2011). Team climate, empowering leadership, and

knowledge sharing. *Journal of Knowledge Management*, 15(2), 299-312.

Yu, D. (1999). Building the knowledge advantage, available at: www.pwcglobal.com (accessed 24 September, 2015).

Zahra, S. A. Neubaum, D. O. and Larraneta, B. (2007). Knowledge sharing and technological capabilities: The moderating role of family involvement. *Journal of Business Research*, 60(10), 1070-1079.

Zahra, S.A. and George, G. (2002). Absorptive capacity: a review, reconceptualization, and extension. *Academy of Management Review*, 27(2), 185-203.

Zhang, Q. and Fung, H. G. (2006). China's social capital and financial performance of private enterprises. *Journal of Small Business and Enterprise Development*, 13(2), 198-207.

Zhi-Hong, S., Li-Bo, F. Shu, C. (2008). *Knowledge Sharing and Innovation Capability: Does Absorptive Capacity Function as a Mediator?* International Conference on Management Science & Engineering (15th), September 10-12, Long Beach, USA.

Zharinova, A. G. (2011). Concept of intellectual capital commercialization management. *Actual Problems of Economics*, 121, 17-29.

Zack, M.H. (1999). Developing a knowledge strategy. *California Management Review*, 41(3), 125-45.

Zack, M.H. (2002) Epilogue: Developing a Knowledge Strategy, in C.W. Choo, N. Bontis, *The Strategic Management of Intellectual Capital and Organizational Knowledge* (eds.), Oxford University Press, Oxford, pp 268-276.

Zack, M., Mckeen, J. and Singh, S. (2009). Knowledge management and organizational performance: an exploratory analysis. *Journal of Knowledge*

Management, 13(6), 392-409.

Zangouinezhad, A. and Moshabaki, A. (2009). The role of structural capital on competitive intelligence. *Industrial Management & Data Systems*, 109(1-2), 262-280.

Zhou, K. Z. and Li, C. B. (2012). How knowledge affects radical innovation: Knowledge base, market knowledge acquisition, and internal knowledge sharing. *Strategic Management Journal*, 33(9), 1090-1102.

Appendix A

Cover Letter

A Survey on Knowledge Sharing Practices, critical success factors of knowledge management and performance among banks employees in Pakistan

Dear Participant,

This survey is aimed at investigating and analyzing the impact of KS-practices on overall performance of banks in Pakistan. This survey is being conducted for the purpose of fulfilling the partial requirements of PhD study Superior University Lahore. This survey instrument invites you to voluntary participate to obtain unbiased response from your side. It would only take the 15-20 minutes to complete the questionnaire. Moreover, all information provided by you will be kept confidential.

- The participant must have minimum experience of three years.
- The participant must be at the post of middle or top level of management.
- The Participant has the right to quit from survey at any time.
- The information provided by participant must be complete in all aspects.

Thanks for your cooperation!

Appendix-B

Questionnaire

Instructions: The following questions are relating to your beliefs to explore the relationship among knowledge sharing practices, knowledge management strategy, knowledge process capability, intellectual capital and banks' performance. Please specify how strongly you agree or disagree with each statement using the scale given below. Check () the corresponding number beside each statement. For that purpose you must be at least 18 years of age and have been employed by your organization for more than six months. It will take approximately 20 to 25 minutes to complete the survey. Moreover, all information provided by you will be kept confidential. Your unbiased cooperation will be highly appreciated in this regard.

Thanks for your cooperation!

- 1=Strongly disagree
- 2=Strongly agree
- 3=Nuetral
- 4=Agree
- 5=Strongly agree

Knowledge Sharing Practices

A	Explicit Knowledge Sharing Practice	1	2	2	3	5
1	Employees in my organization frequently share existing reports and official documents with colleagues.					
2	Employees in my organization frequently collect reports and official documents from others in their work.					
3	Employees in my organization are frequently encouraged by knowledge sharing mechanisms.					
4	Employees in my organization are frequently offered a variety of training and development programs.					
5	Employees in my organization are facilitated by IT systems invested for knowledge sharing.					
B	Tacit Knowledge Sharing Practices					
1	Employees in my organization frequently share knowledge based on their experience.					

2	Employees in my organization frequently share knowledge of know-where or know-whom with others.					
3	Employees in my organization frequently collect knowledge of know-where or know-whom with others.	1	2	3	4	5
4	Employees in my organization frequently share knowledge based on their expertise					
5	Employees in my organization frequently collect knowledge from others based on their expertise.					
6	Employees in my organization will share lessons from past failures when they sense that it is necessary.					
Knowledge Management Strategy						
A	System Oriented Strategy					
1	In our company, knowledge like know-how, technical skill, or problem solving methods is well codified.					
2	In our company, results of projects and meetings are documented.					
3	In our company, knowledge is shared in codified forms like manuals or documents.					
B	Human Oriented Strategy					
1	In our company, knowledge can be easily acquired from experts and co-workers.					
2	In our company, informal conversations and meetings are used for knowledge sharing.					
3	In our company, knowledge is acquired by one-to-one mentoring.					
Knowledge Infrastructure Capability						
A	Technology					
1	My organization provides information technology support for collaborative work regardless of time and place.					
2	My organization provides information technology support for searching for and accessing necessary information.					
3	My organization provides information technology support for systematic storing.					
B	Decentralization					
1	Employees in our organization can take action without a supervisor.					
2	Employees in our organization do not need to refer to someone else to make decisions.					
3	Employees in our organization do not need to ask their supervisor before taking action.					
4	Employees in our organization can make decisions without approval.					
C	Formalization					
1	In our organization there are many activities that are covered					

	by formal procedures.					
2	In our organization contact with our company is on a formal or planned basis.					
3	In our organization, rules and procedures are typically written.					
4	In our organization, employees cannot make their own rules on the job.					
D	Organizational Culture					
1	Our employees are satisfied with the amount of collaboration.	1	2	3	4	5
2	Our employees are helpful.					
3	There is a willingness within our company to accept responsibility for failure.					
4	Our employees are generally trustworthy.					
5	Our employees have reciprocal faith in other members' intentions and behaviors.					
6	Our employees have reciprocal faith in others' commitment to organizational goals.					
7	Our employees have reciprocal faith in others' commitment to the company as a whole.					
8	Our employees have relationships based on reciprocal faith.					
	Knowledge Process Capability					
A	Knowledge Acquisition					
1	Our company has internal processes for generating new knowledge from existing knowledge.					
2	Our company has processes for acquiring knowledge about new products and services within our industry.					
3	Our company has processes for acquiring knowledge about competitors within our industry.					
4	Our company has processes for benchmarking performance among employees and departments.					
5	Our company has processes for identifying and upgrading best practices.					
6	Our company has processes for replacing outdated knowledge with new knowledge.					
B	Knowledge Protection					
1	Our company has technology such as a password system, to restrict access to particular sources of knowledge.					
2	Our company has processes to value and protect tacit knowledge embedded in individuals.					
3	Our company has processes to identify restricted knowledge.					
4	Our company clearly communicates the importance of having knowledge protection on a corporate level.					
C	Knowledge Conversion					
1	Our company has processes for converting competitive intelligence into action plans.					

2	Our company has processes for filtering and evaluating knowledge.					
3	Our company has processes for absorbing individual knowledge into organizational knowledge.					
4	Our company has processes for absorbing knowledge from partners into organizational knowledge.					
5	Our company has processes for integrating different sources and types of knowledge.					
D	Knowledge Application					
1	Our company has processes for using feedback from past experience to improve future projects.	1	2	3	4	5
2	Our company has processes for learning from past mistakes.					
3	Our company has processes for matching sources of knowledge to problems and challenges.					
4	Our company has processes for applying stored knowledge to improve efficiency.					
5	Our company has processes for using knowledge to adjust strategic directions.					
6	Our company has processes for quickly linking sources of knowledge (holder and type) available for solving problems.					
	Intellectual Capital Practices					
A	Human Capital Practices					
1	Employees hold suitable work experience for accomplishing their job successfully in our company					
2	Employees of our company have excellent professional skills in their particular jobs and functions					
3	The employees of our company often develop new ideas and knowledge					
4	Employees are creative in our company.					
B	Structural Capital Practices					
1	The overall operations procedure of our company is very efficient					
2	Our company responds to changes very quickly					
3	Our company has an easily accessible information system					
4	Our company's culture and atmosphere are flexible and comfortable					
5	Our company emphasizes new market development investment					
6	There is supportive among different departments in our company					
C	Relational Capital Practices					
1	Our company discovers and solves problems through intimate communication and effective collaboration.					
2	Our company maintains long-term relationships with customers.					

3	Our company has many excellent suppliers					
4	Our company has stable and good relationships with the strategic partners.					
Overall Performance						
A	Operational Excellence					
1	My organization performs well in improving efficiency of products.					
2	My organization performs well in improving dependability of delivery processes.					
3	My organization performs well in cost management than that of key competitors					
B	Customer Intimacy					
4	My organization performs well in improving customer satisfaction.					
5	My organization performs well in improving quality of customer service.					
C	Product Leadership					
6	My organization performs well in improving quality of products.	1	2	3	4	5
7	My organization performs well in improving functionality of products.					
D	Financial Achievements					
8	My organization performs well in improving revenue growth.					
9	My organization performs well in improving profit margins.					
10	My organization has better Return on investment than that of key competitors.					
11	My organization has better Return on assets than that of key competitors.					

Appendix-C

Correlations Matric

Correlation among all the constructs (N=810)

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
EKSP	1															
TKSP	.082*	1														
SOS	.125**	.542**	1													
HOS	.071*	.452**	.427**	1												
T	.128**	.522**	.560**	.491**	1											
D	-.024	.033	-.035	.290**	.079*	1										
F	.115**	.266**	.339**	.275**	.369**	.071*	1									
OC	.099**	.602**	.518**	.532**	.568**	.175**	.404**	1								
KAC	.143**	.518**	.474**	.465**	.521**	.117**	.384**	.598**	1							
KP	.104**	.392**	.457**	.382**	.476**	.056	.387**	.504**	.524**	1						
KC	.128**	.540**	.536**	.511**	.547**	.180**	.319**	.605**	.603**	.520**	1					
KAP	.091**	.514**	.461**	.503**	.500**	.162**	.395**	.554**	.625**	.510**	.712**	1				
HCP	.108**	.443**	.480**	.463**	.474**	.168**	.391**	.563**	.535**	.493**	.617**	.591**	1			
SCP	.150**	.558**	.511**	.505**	.556**	.189**	.355**	.641**	.610**	.507**	.676**	.689**	.649**	1		
RCP	.147**	.488**	.483**	.447**	.495**	.039	.358**	.553**	.552**	.449**	.556**	.585**	.488**	.626**	1	
OP	.201**	.441**	.458**	.382**	.506**	.101**	.405**	.498**	.492**	.429**	.474**	.477**	.500**	.564**	.488**	1

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

Legends:

1=Explicit KS practices (EKSP), 2=Tacit KS practices (TKSP), 3=System oriented strategy (SOS), 4= Human oriented strategy (HOS), 5=Technology (T), 6=Decentralization (D), 7=Formalization (F), 8=Organizational culture (OC), 9=Knowledge acquisition (KAC), 10=Knowledge protection (KP), 11=Knowledge conversion (KC), 12=Knowledge application (KAP), 13=Human capital practices (HCP), 14=Structural capital practices (SCP), 15=Relation capital practices (RCP), 16=Overall Performance (OP)

Appendix D

Simple Regression Analysis

Regression Analysis

Direct relationship between explicit knowledge sharing practices and knowledge management strategy

Independent Variable	Dependent Variables	
	System oriented strategy	Human oriented strategy
Explicit KS practices	0.125* (3.572)	0.071** (2.022)
R ²	0.016	0.005
Adjusted R ²	0.014	0.004
F-Statistics	12.759	4.090
Sig	0.000	0.043

*, ** and *** represents the significance level at 1%, 5% and 10% respectively

Direct relationship between explicit knowledge sharing practices and knowledge infrastructure capability

Independent Variable	Dependent Variables			
	Technology	Decentralization	Formalization	Organizational culture
Explicit KS practices	0.128* (3.663)	-0.024 (-0.679)	0.115* (3.284)	0.099* (2.817)
R ²	0.016	0.001	0.013	0.010
Adjusted R ²	0.015	-0.000	0.012	0.009
F-Statistics	13.416	.461	10.783	7.938
Sig	0.000	0.497	0.001	0.005

*, ** and *** represents the significance level at 1%, 5% and 10% respectively

Direct relationship between explicit knowledge sharing practices and knowledge process capability

Independent Variable	Dependent Variables			
	Knowledge Acquisition	Knowledge Protection	Knowledge Conversion	Knowledge Application
Explicit KS practices	0.143* (4.115)	0.104* (2.960)	0.128* (3.677)	0.091* (2.602)
R²	0.021	0.011	0.016	0.008
Adjusted R²	0.019	0.010	0.015	0.007
F-Statistics	16.931	8.762	13.517	6.771
Sig	0.000	0.003	0.000	0.009

*, ** and *** represents the significance level at 1%, 5% and 10% respectively

Direct relationship between explicit knowledge sharing practices and Intellectual Capital Practices

Independent Variable	Dependent Variables		
	Human Capital Practices	Structural Capital Practices	Relational Capital Practices
Explicit KS practices	0.108* (3.096)	0.150* (4.298)	0.147* (4.239)
R²	0.012	0.022	0.022
Adjusted R²	0.010	0.021	0.021
F-Statistics	9.584	18.475	17.967
Sig	0.002	0.000	0.000

*, ** and *** represents the significance level at 1%, 5% and 10% respectively

Direct relationship between tacit knowledge sharing practices and knowledge management strategy

Independent Variable	Dependent Variables	
	System oriented strategy	Human oriented strategy
Tacit KS practices	0.542* (18.318)	0.452* (14.402)
R²	0.293	0.204
Adjusted R²	0.293	0.203
F-Statistics	358.542	207.427
Sig	0.000	0.000

*, ** and *** represents the significance level at 1%, 5% and 10% respectively

Direct relationship between tacit knowledge sharing practices and knowledge infrastructure capability

Independent Variable	Dependent Variables			
	Technology	Decentralization	Formalization	Organizational culture
Tacit KS practices	0.522* (17.400)	0.033 (0.928)	0.266* (7.847)	0.602* (21.427)
R²	.273	0.001	0.071	0.362
Adjusted R²	.272	0.000	0.070	0.362
F-Statistics	302.753	.861	61.568	459.130
Sig	0.000	0.354	0.000	0.000

*, ** and *** represents the significance level at 1%, 5% and 10% respectively

Direct relationship between tacit knowledge sharing practices and knowledge process capability

Independent Variable	Dependent Variables			
	Knowledge Acquisition	Knowledge Protection	Knowledge Conversion	Knowledge Application
Tacit KS practices	0.518* (17.194)	0.392* (12.097)	0.540* (18.254)	0.514* (17.033)
R²	0.268	0.153	0.292	0.264
Adjusted R²	0.267	0.152	0.291	0.263
F-Statistics	295.637	146.349	333.191	290.122
Sig	0.000	0.000	0.000	0.000

*, ** and *** represents the significance level at 1%, 5% and 10% respectively

Direct relationship between tacit knowledge sharing practices and Intellectual Capital Practices

Independent Variable	Dependent Variables		
	Human Capital Practices	Structural Capital Practices	Relational Capital Practices
Tacit KS practices	0.443* (14.041)	0.558* (19.117)	0.488* (15.881)
R²	0.196	0.311	0.238
Adjusted R²	0.195	0.311	0.237
F-Statistics	197.155	365.461	252.201
Sig	0.000	0.000	0.000

*, ** and *** represents the significance level at 1%, 5% and 10% respectively

Direct relationship between knowledge management strategy and Overall Performance of Banks

Dependent Variable	Independent Variables	
	System oriented strategy	Human oriented strategy
Overall Performance	0.458* (14.657)	0.382* (11.759)
R²	0.210	0.146
Adjusted R²	0.209	0.145
F-Statistics	214.821	138.281
Sig	0.000	0.000

*, ** and *** represents the significance level at 1%, 5% and 10% respectively

Direct relationship between knowledge infrastructure capability and overall performance of banks

Dependent Variable	Independent Variables			
	Technology	Decentralization	Formalization	Organizational culture
Overall Performance	0.506* (16.659)	0.101* (2.877)	0.405* (12.599)	0.498* (16.331)
R²	0.256	0.010	0.164	.248
Adjusted R²	0.255	0.009	0.163	0.247
F-Statistics	277.511	8.274	158.743	266.690
Sig	0.000	0.004	0.000	0.000

*, ** and *** represents the significance level at 1%, 5% and 10% respectively

Direct relationship between knowledge process capability and overall performance of banks

Dependent Variable	Independent Variables			
	Knowledge Acquisition	Knowledge Protection	Knowledge Conversion	Knowledge Application
Overall Performance	0.492* (16.054)	0.429* (13.483)	0.474* (15.304)	0.477* (15.418)
R²	0.242	0.184	0.225	0.227
Adjusted R²	0.241	0.183	0.224	0.226
F-Statistics	257.718	181.804	234.225	237.707
Sig	0.000	0.000	0.000	0.000

*, ** and *** represents the significance level at 1%, 5% and 10% respectively

Direct relationship between intellectual capital practices and Overall Performance

Dependent Variable	Independent Variables		
	Human Capital Practices	Structural Capital Practices	Relational Capital Practices
Overall Performance	0.500* (16.398)	0.564* (19.432)	0.488* (15.882)
R²	0.250	0.318	0.238
Adjusted R²	0.249	0.318	0.237
F-Statistics	268.891	377.604	252.246
Sig	0.000	0.000	0.000

*, ** and *** represents the significance level at 1%, 5% and 10% respectivelyLY

Direct relationship between knowledge sharing practices and Overall Performance of Banks

Dependent Variable	Independent Variables	
	Explicit Knowledge Sharing	Tacit Knowledge Sharing
Overall Performance	0.201* (5.839)	0.441* (13.973)
R²	0.040	0.195
Adjusted R²	0.039	0.194
F-Statistics	34.098	195.257
Sig	0.000	0.000

*, ** and *** represents the significance level at 1%, 5% and 10% respectively

Appendix E

Regression Analysis

Direct relationship between explicit knowledge sharing practices and knowledge management strategy

Independent variable	Dependent variables		
	SOS1	SOS2	SOS3
Explicit KS practices	.142*	.087*	.051
t-statistics	4.155	2.648	1.623
Adjusted R ²	.020	.007	.002
F-statistics	17.260*	7.009*	2.635

*, ** and *** represents the significance level at 1%, 5% and 10% respectively

Independent variable	Dependent variables		
	HOS1	HOS2	HOS3
Explicit KS practices	.001	.087**	.052
t-statistics	0.029	2.425	1.476
Adjusted R ²	-.001	.006	.001
F-statistics	.001	5.879**	2.179

*, ** and *** represents the significance level at 1%, 5% and 10% respectively

Direct relationship between explicit knowledge sharing practices and knowledge infrastructure capability

Independent variable	Dependent variables		
	T1	T2	T3
Explicit KS practices	0.094*	0.109*	.087*
t-statistics	2.629	3.416	2.676
Adjusted R ²	0.007	0.013	.008
F-statistics	6.912*	11.672*	7.159*

*, ** and *** represents the significance level at 1%, 5% and 10% respectively

Independent variable	Dependent variables			
	D1	D2	D3	D4
Explicit KS practices	0.014	-0.068***	-0.007	-0.024
t-statistics	0.331	-1.716	-0.152	0.547
Adjusted R ²	-.001	.002	-0.001	0.000
F-statistics	.740	2.944***	.879	.547

*, ** and *** represents the significance level at 1%, 5% and 10% respectively

Independent variable	Dependent variables			
	F1	F2	F3	F4
Explicit KS practices	0.094*	-0.002	0.095*	0.115*
t-statistics	2.698	-0.059	2.815	2.996
Adjusted R ²	.008	-0.001	0.008	0.010
F-statistics	7.281*	0.004	7.926*	8.976*

*, ** and *** represents the significance level at 1%, 5% and 10% respectively

Independent variable	Dependent variables							
	OC1	OC2	OC3	OC4	OC5	OC6	OC7	OC8
Explicit KS practices	0.088*	0.078*	0.016	0.089*	0.074*	0.085*	0.045	-0.002
t-statistics	2.420	2.352	0.435	2.760	2.210	2.516	1.380	-0.057
Adjusted R ²	.006	0.006	-0.001	0.008	0.005	0.007	0.001	-0.001
F-statistics	5.857*	5.530*	0.189	7.619*	4.884**	6.330**	1.903	0.003

*, ** and *** represents the significance level at 1%, 5% and 10% respectively

Direct relationship between explicit knowledge sharing practices and knowledge process capability

Independent variable	Dependent variables					
	KAC1	KAC2	KAC3	KAC4	KAC5	KAC6
Explicit KS practices	0.073*	0.064**	0.154*	0.089*	0.116*	0.072*
t-statistics	2.031	2.001	4.332	2.668	3.576	2.140
Adjusted R ²	.004	0.004	0.021	0.008	0.014	0.004
F-statistics	4.126*	4.004**	18.762*	7.118*	12.788*	4.578*

*, ** and *** represents the significance level at 1%, 5% and 10% respectively

Independent variable	Dependent variables			
	KP1	KP2	KP3	KP4
Explicit KS practices	0.086*	0.065**	0.070**	0.070**
t-statistics	2.474	2.066	2.116	2.078
Adjusted R ²	0.006	0.004	0.004	0.004
F-statistics	6.121**	4.268**	4.479**	4.320**

*, ** and *** represents the significance level at 1%, 5% and 10% respectively

Independent variable	Dependent variables				
	KC1	KC2	KC3	KC4	KC5
Explicit KS practices	0.085**	0.100*	0.098*	0.121*	0.071*
t-statistics	2.277	2.977	2.873	3.731	2.051
Adjusted R ²	0.005	0.010	0.009	0.016	0.004
F-statistics	5.187**	8.863*	8.256*	13.917*	4.209**

*, ** and *** represents the significance level at 1%, 5% and 10% respectively

Direct relationship between explicit knowledge sharing practices and Intellectual capital practices

Independent variable	Dependent variables			
	HCP1	HCP2	HCP3	HCP4
Explicit KS practices	0.068**	0.111**	0.015	0.111**
t-statistics	2.016	3.388	0.397	3.118
Adjusted R ²	0.004	0.013	-0.001	0.011
F-statistics	4.006**	11.478*	0.158*	9.721*

*, ** and *** represents the significance level at 1%, 5% and 10% respectively

Independent variable	Dependent variables					
	SC1	SC2	SC3	SC4	SC5	SC6
Explicit KS practices	0.075**	0.096*	0.095*	0.146*	0.126*	0.144*
t-statistics	2.169	2.747	2.602	3.695	3.685	4.053
Adjusted R ²	0.005	0.008	0.007	0.015	0.015	0.019
F-statistics	4.707**	7.547**	6.769*	13.651*	13.582*	16.424*

*, ** and *** represents the significance level at 1%, 5% and 10% respectively

Independent variable	Dependent variables			
	RC1	RC2	RC3	RC4
Explicit KS practices	0.097*	0.088*	0.103*	0.119*
t-statistics	2.931	2.664	3.312	3.871
Adjusted R ²	0.009	0.007	0.012	0.017
F-statistics	8.590*	7.096*	10.967*	14.984*

*, ** and *** represents the significance level at 1%, 5% and 10% respectively

Direct relationship between tacit knowledge sharing practices and knowledge management strategy

Independent variable	Dependent variables		
	SOS1	SOS2	SOS3
Tacit KS practices	.516*	0.168*	0.296*
t-statistics	17.510	12.828	9.973
Adjusted R ²	.274	0.168	0.109
F-statistics	306.611*	164.558*	99.466

*, ** and *** represents the significance level at 1%, 5% and 10% respectively

Independent variable	Dependent variables		
	HOS1	HOS2	HOS3
Tacit KS practices	.234*	0.408*	0.328
t-statistics	6.489	12.311	9.804
Adjusted R ²	0.048	0.157	0.105
F-statistics	42.112	151.569*	9.804*

*, ** and *** represents the significance level at 1%, 5% and 10% respectively

Direct relationship between explicit knowledge sharing practices and knowledge infrastructure capability

Independent variable	Dependent variables		
	T1	T2	T3
Tacit KS practices	0.420*	0.409*	0.361*
t-statistics	12.890	14.258	11.945
Adjusted R ²	0.170	0.200	0.149
F-statistics	166.151*	203.290*	142.687*

*, ** and *** represents the significance level at 1%, 5% and 10% respectively

Independent variable	Dependent variables			
	D1	D2	D3	D4
Tacit KS practices	0.018	0.021	-0.007	-0.015
t-statistics	0.415	0.545	-0.152	-0.386
Adjusted R ²	-0.001	0.000	-0.001	0.000
F-statistics	0.172	0.297	.879	.149

*, ** and *** represents the significance level at 1%, 5% and 10% respectively

Independent variable	Dependent variables			
	F1	F2	F3	F4
Tacit KS practices	0.281*	0.065**	0.122*	0.238*
t-statistics	8.378	1.885	3.619	6.320
Adjusted R ²	0.079	0.003	0.015	0.046
F-statistics	70.184*	3.555	13.096*	39.945*

*, ** and *** represents the significance level at 1%, 5% and 10% respectively

Independent variable	Dependent variables							
	OC1	OC2	OC3	OC4	OC5	OC6	OC7	OC8
Tacit KS practices	0.408*	0.444*	0.348*	0.386*	0.349*	0.412*	0.398*	0.241*
t-statistics	12.157	15.068	10.182	13.149	11.232	13.479	13.645	7.108
Adjusted R ²	0.154	0.218	0.113	0.175	0.134	0.183	0.186	0.058
F-statistics	147.788*	227.041*	103.666*	172.908*	126.50*	181.686*	186.185*	50.517*

*, ** and *** represents the significance level at 1%, 5% and 10% respectively

Direct relationship between tacit knowledge sharing practices and knowledge process capability

Independent variable	Dependent variables					
	KAC1	KAC2	KAC3	KAC4	KAC5	KAC6
Tacit KS practices	0.409*	0.331*	0.358*	0.315*	0.330*	0.366*
t-statistics	12.453	11.041	10.579	9.948	10.741	11.660
Adjusted R ²	0.160	0.130	0.121	0.108	0.124	0.143
F-statistics	155.081*	121.908*	111.908*	98.957*	115.372*	135.955*

*, ** and *** represents the significance level at 1%, 5% and 10% respectively

Independent variable	Dependent variables			
	KP1	KP2	KP3	KP4
Tacit KS practices	0.181*	0.238*	0.295*	0.356*
t-statistics	5.296	7.773	9.308	11.373
Adjusted R ²	0.032	0.068	0.096	0.137
F-statistics	28.052*	60.413*	86.631*	129.334*

*, ** and *** represents the significance level at 1%, 5% and 10% respectively

Independent variable	Dependent variables				
	KC1	KC2	KC3	KC4	KC5
tacit KS practices	0.484*	0.365*	0.371*	0.395*	0.416*
t-statistics	14.591	135.204	11.691	13.291	13.290
Adjusted R ²	0.208	0.142	0.144	0.178	0.178
F-statistics	212.910*	135.204*	136.686*	176.659*	176.621*

*, ** and *** represents the significance level at 1%, 5% and 10% respectively

Direct relationship between tacit knowledge sharing practices and Intellectual capital practices

Independent variable	Dependent variables			
	HCP1	HCP2	HCP3	HCP4
Tacit KS practices	0.312*	0.362*	0.261*	0.361*
t-statistics	9.731	11.926	7.322	10.785
Adjusted R ²	0.104	0.149	0.061	0.125
F-statistics	94.691*	142.235*	53.610*	116.317*

*, ** and *** represents the significance level at 1%, 5% and 10% respectively

Independent variable	Dependent variables					
	SC1	SC2	SC3	SC4	SC5	SC6
Tacit KS practices	0.441*	0.430*	0.398*	0.395*	0.398*	0.484*
t-statistics	14.219	13.553	11.666	10.530	12.663	15.284
Adjusted R²	0.199	0.184	0.143	0.120	0.165	0.223
F-statistics	202.186*	183.696*	136.106*	110.884*	12.663*	233.602*

*, ** and *** represents the significance level at 1%, 5% and 10% respectively

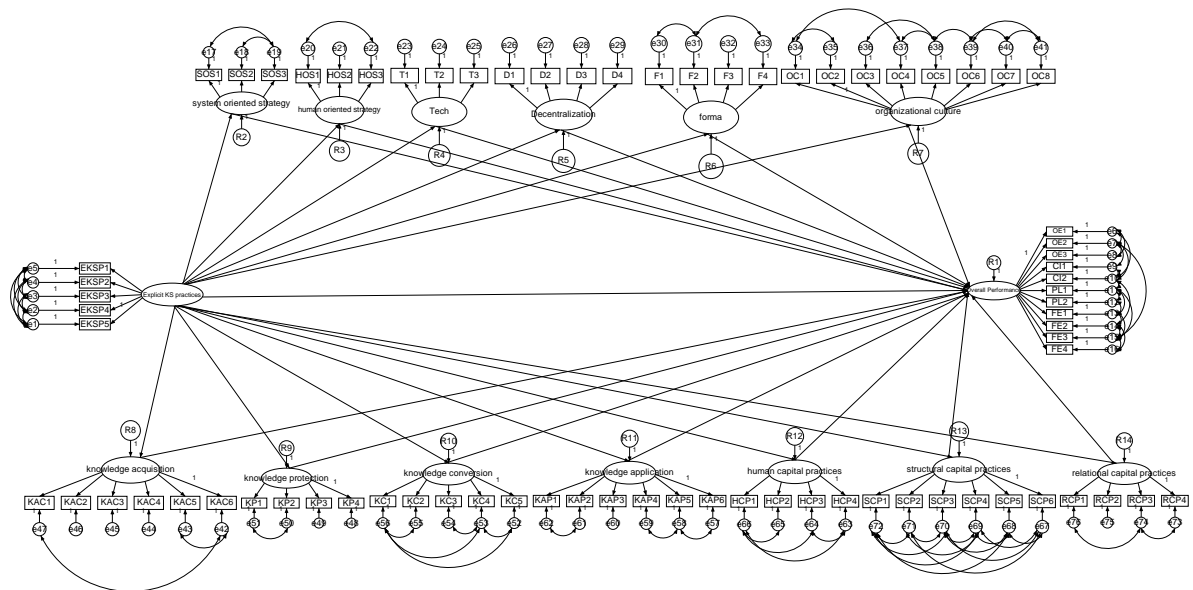
Independent variable	Dependent variables			
	RC1	RC2	RC3	RC4
tacit KS practices	0.443*	0.343*	0.286*	0.295*
t-statistics	15.039	11.099	9.628	10.040
Adjusted R²	0.218	0.131	0.102	0.110
F-statistics	226.158*	123.191*	92.699*	100.800*

*, ** and *** represents the significance level at 1%, 5% and 10% respectively

Appendix-F

Measurement Models

Measurement Model I for explicit KS-driven performance



Structural model fitness results for explicit KS practices

Fit indices	Scores	Standardized cut-off value
Absolute fit measures		
χ^2/df	2.618	$\leq 2a; \leq 5b$
GFI	0.805	$\geq 0.90a; \geq 0.80$
RMSEA	0.045	$< 0.08a; < 0.1$

Table 5.13 Structural model fitness results for tacit KS practices

Fit indices	Scores	Standardized cut-off value
Absolute fit measures		
χ^2/df	2.662	$\leq 2a; \leq 5b$
GFI	0.800	$\geq 0.90a; \geq 0.80$
RMSEA	0.045	$< 0.08a; < 0.1$
Incremental fit measures		
NFI	0.907	$\geq 0.90a$
AGFI	0.809	$\geq 0.90a; \geq 0.80b$
CFI	0.904	$\geq 0.90a$
Parsimonious fit measures		
PGFI	0.732	The higher, the better
PNFI	0.717	The higher, the better

Notes: Acceptability Criterion: ^aacceptable; ^bmarginal.